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PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3, SECOND INTERVAL INSERVICE INSPECTION PROGRAM

FINAL REPORT
SwRI Project 7841

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PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3,
SECOND INTERVAL INSERVICE INSPECTION PROGRAM

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1. INTRODUCTION

1.1 GENERAL

This program defines the second 10-year interval inservice examination (ISI) requirements for Class 1, Class 2, and Class 3 components and inservice testing of pumps and valves for Philadelphia Electric Company's (PECo) Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The second 10-year intervals begin on July 5, 1984, and December 12, 1984, respectively.

This program has been developed as required by Paragraph 50.55(a) of 10CFR50 following the guidance of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI "Rules for Inservice Inspection of Nuclear Power Plant Components."

In accordance with 10CFR50, this program is in compliance, where possible, with the applicable requirements of 1980 Edition of Section XI with Addenda through Winter 1981. Although the basic plant design, accomplished prior to December 1969, is not totally consistent with examination requirements of later codes, every attempt has been made to obtain maximum compliance. For instances where 100 percent compliance is not feasible, alternative examinations and tests have been proposed which will satisfy the intent of the Code. This program identifies both the areas for which compliance can be achieved and areas for which compliance cannot be achieved with proposed alternative methods of assurance of system integrity.

It should be noted that 10CFR50.55a(b), 2(iv) also defines criteria for the selection of Class 2, Category C-F, welds. These criteria are as follows:

> "Pressure-retaining welds in ASME Code Class 2 piping (applies to Tables IWC-2520 or IWC-2520-1, Category C-F). (A) Appropriate Code Class 2 pipe welds in Residual Heat Removal Systems, Emergency Core Cooling Systems, and Containment Heat Removal Systems, shall be examined. The extent of examination for these systems shall be determined by the requirements of paragraph IWC-1220, Table IWC-2520 Category C-F and C-G, and paragraph IWC-2411 in the 1974 Edition and Addenda through the Summer 1975 Addenda of Section XI of the ASME Code."

These criteria will be applied for these systems during the second 10-year interval.

1.2 RESPONSIBILITY

As owner of the plants, PECo bears the overall responsibility for the performance of the ISIs. Certain nondestructive examinations will be performed by a qualified examination agency. The results and evaluation of the examinations will be reported to PECo for final evaluation and disposition.

1.3 RECORDS

Records and documentation of all information and inspection results, which provide the basis for evaluation and which facilitate comparison with results from previous and subsequent inspections, will be maintained and available for the active life of the plant in accordance with Section XI, IWA-6000.

1.4 METHODS OF EXAMINATION

Examination methods to be used for the ISIs are visual, surface, and volumetric. Personnel performing nondestructive examinations will be qualified with a written procedure prepared in accordance with the American Society for Nondestructive Testing (ASNT), "Recommended Practice SNT-TC-1A, Supplements and Appendices," as applicable for techniques and methods used.

1.4.1 VISUAL EXAMINATION

Visual examinations (VT) will be performed in accordance with IWA-2210 which defines four types of VT examinations. These types of VT examinations are summarized as follows:

(1) VT-1 examinations shall be conducted to determine the condition of the part, component, or surface examined. The examination shall determine conditions such as cracks, wear, corrosion, erosion, or physical damage on the surfaces of the part or components. This type of examination may be performed by direct or remote methods as defined in IWA-2211.

(2) VT-2 examinations shall be conducted to detect leakage (or abnormal leakage) from pressure retaining components during system pressure or functional tests.

(3) VT-3 examinations shall be conducted to determine general mechanical and structural conditions of components and their supports such as the preservice of loose parts, debris or abnormal corrosion products, wear, erosion, corrosion, and the loss of integrity at bolted or welded connections.

(4) VT-4 examinations shall be conducted to determine conditions related to operability of components or devices, such as mechanical and hydraulic snubbers, components supports, pumps, valves, and spring loaded and constant weight hangers.

1.4.2 SURFACE EXAMINATION

A surface examination is performed to detect the presence of surface cracks or discontinuities. It may be conducted by either magnetic

particle (MT) or liquid penetrant (PT) techniques where the surface conditions, material, and accessibility permit such an examination.

1.4.3 VOLUMETRIC EXAMINATION

A volumetric examination is performed to detect the presence of discontinuities throughout the volume of material. Two such volumetric techniques are radiographic (RT) and ultrasonic (UT) examinations.

For volumetric examinations, the major emphasis in this program is placed on the use of UT methods for the following reasons:

(1) Other work can be conducted in the area where UT examinations are being performed, thus potentially reducing outage time.

(2) In some locations, background radiation levels would preclude RT examination.

(3) Methods have been developed to permit remote examination with minimum occupancy time in certain areas.

(4) Records have been obtained utilizing UT to indicate pre-operational conditions for comparison with subsequent examinations.

1.5 CLASSIFICATION OF COMPONENTS

Components have been classified for purposes of inservice inspection in accordance with the requirements of 10CFR50.55a, Section XI of the Code, and the guidance contained in Regulatory Guide 1.26.

It must be noted that the classification of components as equivalent to ASME Classes 1, 2, or 3 implies equivalency for purposes of inservice inspection only and does not imply that the components were designed in accordance with ASME requirements. Since most of the basic plant design was accomplished prior to December 1969, codes and standards applicable at that time were used as set forth in PECo's FSAR.

The component classification is shown in the ISI-M-300 series of figures which are included in Appendix A. The ISI boundary drawings are Piping and Instrumentation Diagrams (P&IDs) marked up to define the inservice inspection boundaries. Certain notes and details not related to inservice inspection have been deleted.

1.6 REPAIR PROCEDURES

Repairs to the pressure retaining boundary of ASME Classes 1, 2, or 3 (equivalent) components will be performed in accordance with IWA-4000 by utilizing PECo-approved procedures which comply with the Code applicable to the construction of the component. A repair program will be developed

in accordance with IWA-4130. Repair procedures for quality assured components will be reviewed by an authorized Code inspector prior to implementation. Repair work in progress will also be subject to surveillance by an authorized inspector.

1.7 BASELINE EXAMINATIONS

The construction code referenced in Paragraph IWA-3100(b) is interpreted at Peach Bottom to mean the 1968 Edition of ASME Section III. This approach will maintain the necessary consistency between the baseline examinations and future ISI examinations to meet the intent of ASME Section XI. Acceptance of this interpretation was requested from the NRC by correspondence dated February 19, 1980. Approval of this request was granted by the NRC in correspondence dated May 2, 1983 (J. F. Stolz, NRC, to E. G. Bauer, Jr., PECo). The NRC evaluation concluded that it would be impractical to discard the present data bank in favor of establishing a new evaluation criteria, especially where it is based on earlier Section III Code requirements.

2. CLASS 1 PROGRAM

2.1 IDENTIFICATION OF COMPONENTS

The ASME Class 1 (equivalent) components are outlined on ISI-M-351 and further details are shown on the individual system diagrams. The reactor pressure vessel (RPV) and selected components in the following systems are included:

(1) Main Steam
(2) Main Recirculation
(3) Control Rod Drive Hydraulic Return
(4) Feedwater
(5) Residual Heat Removal
(6) Reactor Water Cleanup
(7) Reactor Core Isolation Cooling
(8) Core Spray
(9) High Pressure Coolant Injection
(10) Standby Liquid Control

In these systems, the Class 1 boundary includes the piping within the drywell and extends to the first valve outside containment. This is an acceptable isolation valve per the Code except in the case of the feedwater supply and reactor water cleanup, where the first valve outside containment is a simple check valve.

This Class 1 boundary was defined in the initial Inservice Inspection Program, was approved by the regulatory authority based on design prior to Code requirement, and formed the basis upon which the plant was licensed and from which baseline data was taken. Consequently, this boundary remains unchanged in this revised program.

It should be noted that, in accordance with IWB-1220(a), components and piping containing water, 1-1/2 inches in diameter and smaller, and components and piping containing steam, 3 inches in diameter and smaller, have been exempted on the premise that the amount of fluid lost in the event of a rupture can be replenished by the normal makeup systems which are operable from onsite emergency power. Portions of the following piping systems that fall into this category are: Jet Pump Instrumentation Lines, Standby Liquid Control System, Control Rod Drive Hydraulic System, and Instrumentation Lines. These exempted components and piping will be subject to VT examination per Table IWB-2500-1, Category B-P.

2.2 EXAMINATION PROGRAM

The examinations planned for the second 10-year interval are discussed below for the RPV and Class 1 piping, pumps, and valves. The examination areas have been separated into categories in accordance with the 1980 Edition of ASME Section XI with Addenda through Winter 1981. The requirements are discussed below and are summarized in Table 2.2-1.

2.2.1 REACTOR PRESSURE VESSEL

Category B-A - Pressure-Retaining Welds in Reactor Vessel

Item B1.10 Shell Welds

Due to plant design, 100 percent of the weld length cannot be examined. See Request for Relief, Subsection 2.4.1. Mechanized UT will be performed to the extent practical for Code-required circumferential and longitudinal welds in the RPV beltline regions. Manual UT will be applied where feasible. These examinations may be performed at or near the end of the inspection interval.

Item B1.20 Head Welds

Meridional and circumferential seam welds in the bottom head will be considered individually for physical accessibility and radiation levels. The welds on the closure head are accessible for volumetric examination when the head is removed for refueling. These examinations may be performed at or near the end of the inspection interval.

Items B1.30 and B1.40 Shell-to-Flange and Head-to-Flange

The shell-to-flange weld will be examined ultrasonically from the seal surface. The head-to-flange weld is available for UT and MT examination when the head is removed for refueling.

Category B-D - Primary Nozzle-to-Vessel Welds and Nozzle Inside Radius Section--Items B3.90 and B3.100

These RPV nozzle welds are accessible for UT examination from the outside surface of the RPV when the surrounding sections of the sacrificial shield and insulation are removed. Permanent tracks are mounted on the Recirculation Outlet (N1), Recirculation Inlet (N2), Main Steam (N3), Feedwater (N4), and Core Spray (N5) nozzles for mechanized UT examination of these welds and inside radius sections. Closure head nozzles are readily accessible for UT examination when the head is removed for refueling.

Category B-E - Vessel Penetrations, Including Control Rod Drive and Instrumentation Penetrations--Items B4.11, B4.12, and B4.13

A VT-2 examination will be conducted for evidence of leakage of partial penetration welds in the RPV in accordance with IWA-5240.

Category B-F - Nozzle-to-Safe End Welds--Items B5.10 and B5.20

There is a dissimilar metal weld between the carbon steel nozzle forgings and the piping system on some nozzles in the RPV. Access to these dissimilar metal welds for volumetric and surface examinations will be provided for in the same manner as for the nozzle-to-vessel primary welds.

Category B-G-1 - Pressure-Retaining Bolting Greater than Two Inches in Diameter

Item B6.10 Closure Head Nuts

The closure head nuts will be removed and available for an augmented volumetric examination in accordance with IWA-2240 requirements. An augmented volumetric examination will be performed on the thread and thread root areas in lieu of a surface examination.

Item B6.20 Closure Head Studs, In Place

Closure head studs which are not removed will be subjected to a volumetric examination in place.

Item B6.30 Closure Studs, When Removed

Not all of the closure studs are scheduled to be removed during any one refueling. However, during the course of the interval, all studs which are removed will be subjected to both volumetric and surface examination.

Item B6.40 Threads in Flange

Threaded areas in the vessel flange will be subjected to volumetric examination.

Item B6.50 Closure Washers and Bushings

A VT-1 examination will be conducted to determine the condition of the washers.

Category B-G-2 - Pressure-Retaining Bolting--Item B7.10

This category applies to bolting two inches and less in diameter. There is no bolting smaller than two inches in diameter in the RPV.

Category B-H - Integral Attachments for Vessels--Item B8.10

The RPV is supported on an integrally welded skirt below the shell-to-lower head circumferential weld. Also, accessible areas on the RPV stabilizer brackets will be examined. These attachments are subject to a volumetric or surface examination, as applicable.

Category B-N-1 - Interior of Reactor Vessel--Item B13.10

A VT-3 examination will be performed on accessible areas above and below the Reactor Core in accordance with the Code.

Category B-N-2 - Integrally Welded Core Supports, Structures, and Interior Attachments--Items B13.20 and B13.21

VT-1 and VT-3 examinations will be performed on accessible areas in accordance with the Code.

Category B-N-3 - Removable Core Support Structures--Item B13.22

A VT-3 examination will be performed on the visually accessible surfaces of the core support structure.

Category B-O - Pressure-Retaining Welds in Control Rod Housings--Item B14.10

Ten percent of the peripheral Control Rod Drive housings will be examined by volumetric or surface examination, as applicable.

Category B-P - All Pressure-Retaining Components--Items B15.10 and B15.11

Components exempted from volumetric and surface examination will be visually examined (VT-2) for evidence of leakage during system leakage and/or system hydrostatic tests (IWB-5221, IWB-5222).

2.2.2 PIPING

Unless exempted under IWB-1220 and thus subjected to a VT examination under Category B-P, pressure piping will be examined in accordance with the items as listed below, with the exception of:

(1) Areas within the containment penetrations,

(2) Cast fittings and structures which are not amenable to UT examination and which are in a system which cannot be drained without draining the RPV, and

(3) Any weld which during the preservice examination (PSI) was found not suitable for UT examination (and continuous evaluation indicates that the state-of-the-art techniques do not allow UT examination) and which cannot be radiographed due to (a) geometry and/or interference from surrounding structures, or (b) the system cannot be drained without draining the RPV.

Category B-F - Pressure-Retaining Dissimilar Metal Welds

The dissimilar metal welds joining the piping safe ends to the RPV are included in the examination of the RPV nozzle-to-safe end welds (Items B5.10 and B5.20). There are other dissimilar metal welds in the system where lines change from carbon steel to stainless steel. These welds will be subjected to volumetric and surface examination.

Item B5.130

Dissimilar metal butt welds in piping equal to or greater than four inches in diameter will be subjected to surface and volumetric examination.

Item B5.140

Dissimilar metal welds in piping less than four inches in diameter will be subject to surface examination.

Item B5.150

Dissimilar metal socket welds in piping will be subject to surface examination.

Category B-G-1 - Pressure-Retaining Bolting Greater Than Two Inches in Diameter--Items B6.150, B6.160, and B6.170

There is no pressure-retaining bolting greater than two inches in diameter in these piping systems.

Category B-G-2 - Pressure-Retaining Bolting Two Inches and Less in Diameter--Item B7.50

The bolting in this category will be examined visually (VT-1) either in place under tension, when the connection is disassembled, or when the bolting is removed.

Category B-J - Pressure-Retaining Welds in Piping

Items B9.11 and B9.12 Circumferential and Longitudinal Welds in Piping Four Inches or Larger in Diameter

Circumferential and longitudinal welds in pressure-retaining piping and fittings will be subjected to volumetric and surface examination.

Item B9.21 Circumferential Welds in Piping Less Than Four Inches in Diameter

Circumferential welds in pressure-retaining piping and fittings will be subjected to surface examination.

Item B9.31 Branch Pipe Connection Welds Four Inches and Larger in Diameter

Branch pipe connection welds four inches and larger in diameter will be subjected to volumetric and surface examination.

Item B9.32 Branch Pipe Connection Welds Less Than Four Inches in Diameter

Branch pipe connection welds less than four inches in diameter will be subjected to surface examination.

Item B9.40 Socket Welds

Socket welds will be subjected to surface examination.

Category B-K-1 - Integral Attachments for Piping--Item B10.10

Integrally welded attachments whose base material thickness is 5/8 inch or greater will be subjected to volumetric or surface examination as applicable.

Category B-P - All Pressure-Retaining Components--Items B15.50 and B15.51

Pressure-retaining boundaries for pipe components exempted from volumetric or surface examination under IWB-1220 will be visually (VT-2) examined for evidence

of leakage during system leakage and/or system hydrostatic tests (IWB-5221, IWB-5222).

2.2.3 PUMPS

Category B-G-1 - Pressure-Retaining Bolting Greater Than Two Inches in Diameter

Item B6.180 Bolts and Studs

Bolting greater than two inches in diameter will be examined volumetrically in place under tension, when the connection is disassembled or when the bolting is removed.

Item B6.190 Flange Surface

Flange surfaces will be visually (VT-1) examined when the connection is disassembled, with particular attention to the annular surface for one inch around each stud hole.

Item B6.200 Nuts, Bushings, and Washers

Nuts, bushings, and washers will be visually (VT-1) examined in place under tension, when the connection is disassembled or when the bolting is removed.

Category B-G-2 - Pressure-Retaining Bolting Two Inches and Less in Diameter--Item B7.60

There is no pressure-retaining bolting two inches or less in diameter in the main recirculation pumps.

Category B-K-1 - Integral Attachments for Pumps--Item B10.20

Integrally welded attachments will be subjected to either volumetric or surface examinations.

Category B-L-1 - Pressure-Retaining Welds In Pump Casings--Item B12.10

There are window welds within the pressure-retaining areas of the pumps which will be subjected to surface examination in lieu of ultrasonic examination. See Request for Relief, Subsection 2.4.2.

Category B-L-2 - Pump Casings--Item B12.20

The only pumps in this category subject to examination are those in the Reactor Recirculation System. An ultrasonic surveillance program will be implemented as

the primary alternative examination. See Request for Relief, Subsection 2.4.2. VT-3 examinations will be scheduled and performed when the pumps are disassembled for maintenance reasons.

Category B-P - All Pressure-Retaining Components--Items B15.60 and B15.61

Pressure retaining boundaries for pump components exempted from volumetric or surface examinations under IWB-1220 will be visually (VT-2) examined for evidence of leakage during system leakage and/or system hydrostatic tests (IWB-5221, IWB-5222).

2.2.4 VALVES

Category B-G-1 - Pressure-Retaining Bolting Greater Than Two Inches in Diameter--Item B6.210

Bolts and studs will be examined volumetrically in place under tension, when the connection is disassembled or when the bolting is removed.

Item B6.220 Flange Surface When Connection Disassembled

Flange surfaces will be visually (VT-1) examined when the connection is disassembled with particular attention to the annular surface for one inch around each stud hole.

Item B6.230 Nuts, Bushings, and Washers

Nuts, bushings, and washers will be visually (VT-1) examined when the connection is disassembled.

Category B-G-2 - Pressure-Retaining Bolting, Two Inches and Less in Diameter--Item B7.70

Bolts, studs, and nuts two inches and less in diameter will be visually (VT-1) examined in place under tension, when the connection is disassembled or when the bolting is removed.

Category B-K-1 - Integral Attachments for Valves--Item B10.30

Integrally welded attachments will be subjected to either volumetric or surface examinations.

Category B-M-1 - Pressure-Retaining Welds in Valve Bodies--Items B12.30 and B12.40

There are no valves in the system with pressure-retaining welds.

Category B-M-2 - Valve Bodies--Item B12.50

For valve bodies exceeding four inches nominal pipe size, an augmented UT Surveillance Program will be implemented as the primary alternative examination. See Request for Relief, Subsection 2.4.3. The areas subject to VT-3 examination include the internal pressure boundary surfaces. Code-required coverage would include one of each group of valves of the same structural design and manufacturing method, manufacturer, and function in the system. Valves in this category will be examined when disassembled for maintenance purposes.

Category B-P - All Pressure-Retaining Components--Items B15.70 and B15.71

Valve components exempted from volumetric or surface examination by IWB-1220 will be examined visually (VT-2) for evidence of leakage during the system leakage and/or system hydrostatic tests (IWB-5221, IWB-5222).

2.3 SYSTEM PRESSURE TESTS

2.3.1 SYSTEM LEAKAGE TEST

Class 1 components will be subjected to a system leakage test IWB-5221 prior to startup following each reactor refueling outage at a test pressure not less than system nominal operating pressure at 100 percent rated reactor power. The tests scheduled to be performed during the second 10-year interval are shown in Table 2.2-1.

2.3.2 SYSTEM HYDROSTATIC TEST

Class 1 components will be subjected to a system hydrostatic test at or near the end of the inspection interval at a test pressure approximately 30 psi below the lowest relief valve setting but not less than 1.05 times the system nominal operating pressure at 100 percent rated reactor power. At test temperatures above 350°F the test pressure may be adjusted in accordance with Table IWB-5220-1. The test scheduled to be performed during the second 10-year interval is shown in Table 2.2-1.

2.4 REQUESTS FOR RELIEF FROM SECTION XI REQUIREMENTS

2.4.1 REQUEST FOR RELIEF

2.4.1.1 Reactor Pressure Vessel

Circumferential and longitudinal welds on the reactor pressure vessel.

2.4.1.2 Requirement from Which Relief Requested

Table IWB-2500-1, Category B-A requires essentially 100 percent of the shell welds length to be examined.

2.4.1.3 Justification

The space between the insulation and the RPV outside surface, nominally four inches, has been measured in some areas to be significantly less. The circumferential and longitudinal welds have been examined in accordance with previous Code requirements (i.e., 5 and 10 percent weld length). The design of the biological shield precludes 100 percent access to the RPV shell welds.

2.4.1.4 Testing in Lieu of Section XI Requirements

There are various windows in the biological shield which permit limited access to the RPV shell welds. An attempt will be made to obtain the maximum examination weld length for the circumferential and longitudinal welds.

2.4.2 REQUEST FOR RELIEF

2.4.2.1 Components

Reactor recirculation pumps, 2AP34 & 2BP34, ASME Class 1 (equivalent).

2.4.2.2 Requirement from Which Relief Requested

Table IWB-2500-1, Category B-L-1, requires volumetric examination of pressure-retaining welds in the pump casing of one pump in each group of pumps of similar function to be performed once per inspection interval.

2.4.2.3 Justification

The pump casings are constructed of stainless steel casings which, due to their large grain structure, are highly attenuative to high frequency ultrasonic beams. Casting base metal-to-weld metal interfaces tend to be reflective to ultrasound, producing false echoes which aggravate the attenuation problem. The interface cannot be reliably distinguished from either lack of fusion or incomplete penetration and

prevents interpretation of signals. Therefore, angle beam longitudinal and shear wave ultrasonic examinations of welds in static cast steel have not proven to be feasible.

2.4.2.4 Testing in Lieu of Section XI Requirements

Pressure-retaining welds in the pump casing will be subjected to a surface examination.

2.4.2.5 Requirement from Which Relief Requested

Table IWB-2500-1, Category B-L-2 requires VT examination of the internal pressure boundary surfaces of one pump in each group of pumps of similar function to be performed once per inspection interval.

2.4.2.6 Justification

This requirement, in absence of other required maintenance, would necessitate dismantling a recirculation pump solely to perform a VT inspection of internal surfaces, and as such, represents an unnecessary exposure to radiation and contamination and an excessive expense. A job of this scope also presents an unnecessary risk of an industrial accident due to the cramped quarters and limited visibility resulting from the use of full anti-C protective equipment.

The disassembly of this pump constitutes a maintenance job of major proportions that, due to plant design, involves removing the motor and transporting it outside the containment. Movement of such large heavy components within the drywell with the attendant hazard of accidental damage to other safety-related piping and equipment constitutes a risk to reactor safety. It is estimated that the dismantling and reassembly of one pump would consume more than 10,000 manhours and in excess of one month of round-the-clock effort and would result in a cumulative dose of between 100 and 500 man-rem.

The net result of this major effort would be a VT inspection consuming about eight manhours. The questionable benefit to be obtained from such an inspection when measured against the cost in man-rem appears to be in conflict with the concept of "As Low as Reasonably Achievable." In view of the cost in dollars, potential hazards, and man-rem and in view of the minimal benefits to be obtained, it is concluded that this Code requirement is impractical for PBAPS.

2.4.2.7 Testing in Lieu of Section XI Requirements

The internal surfaces of the recirculation pump casings will be visually inspected whenever these surfaces are accessible as a result of disassembly for other maintenance purposes. In the interim, annual performance tests will be conducted to verify pumping capability and to indicate the condition of internal clearances. An ultrasonic surveillance program will be implemented as the primary alternative

examination. These data, coupled with the hydrostatic tests performed once per inspection interval and the external inspections performed during seal maintenance, will provide adequate assurance of structural integrity.

2.4.3 REQUEST FOR RELIEF

2.4.3.1 Components

ASME Class 1 (equivalent) valves exceeding four inches nominal pipe size.

2.4.3.2 Requirement from Which Relief Requested

Table IWB-2500-1, Category B-M-2 requires VT examination of the internal pressure boundary surfaces of one valve in each group of valves of the same design, manufacturing method, manufacturer, and function to be performed once per inspection interval.

2.4.3.3 Justification

Valves on the recirculation loop suction piping would require off-loading the fuel elements and draining the reactor prior to disassembly. Work on recirculation pump discharge valves, equalizing valves, and RHR injection valves would require installation of plugs in the jet pump risers. Preparatory work of this scope is considered impractical for the sole purpose of conducting a VT examination. Contamination levels in the valves associated with the recirculation loops are particularly high due to the physical location of these valves at the bottom of the system.

During routine maintenance, when valves are disassembled, VT-3 examinations are performed on valve body internal surfaces. Disassembly of other Class 1 valves solely for internal inspection is impractical in view of the fact that most of these valves, particularly the containment isolation valves, are disassembled frequently for maintenance of leak-tightness.

Disassembly of these valves solely for VT inspection, in absence of other required maintenance, would be extremely impractical and unjust. The cost of personnel exposure, potential hazards, time and radioactive waste would be excessively high and in direct violation of the concept of "As Low as Reasonably Achievable."

2.4.3.4 Alternate to Section XI Requirement

Class 1 valves exceeding four inches nominal pipe size are subjected to VT inspection of the internal surfaces of the valve body when disassembled for maintenance in accordance with an established program and documented procedures. However, an ultrasonic surveillance program will be implemented as the primary alternative examination. These data, coupled with periodic leak tests and hydrostatic tests, will provide adequate assurance of the structural integrity of the Class 1 valve bodies, while keeping exposure to radiation and contamination "As Low as Reasonably Achievable."

2.4.4 REQUEST FOR RELIEF

2.4.4.1 Components

ASME Class 1 (equivalent) components.

2.4.4.2 Requirement from Which Relief Requested

IWB-5222 requires that Class 1 systems and components be subjected to a system hydrostatic test at pressure and temperature as specified in Table IWB-5220-1.

2.4.4.3 Justification

Plant Technical Specifications require primary containment integrity to be maintained whenever reactor water temperature is above 212°F when fuel is in the vessel. Primary containment integrity requires the drywell to be intact and all automatic primary containment isolation valves to be operable or deactivated in the isolated position. During the hydrostatic test, the drywell head must be removed to allow inspection of the reactor vessel head flange area and reactor head spray nozzle. Also, during the hydrostatic test, several primary containment isolation valves are either deactivated in the open position or are bypassed by pipe jumpers to extend the test boundary to include all Class 1 piping. For these reasons, the hydrostatic test cannot be done at temperatures above 212°F.

A test temperature of 212°F corresponds to a test pressure of 1082 psig on Table IWB-5220-1. The present setting of the four lowest set relief valves is 1105 ±11 psig. It is proposed to conduct the hydrostatic test with all relief valves in place and to raise pressure within 30 psig of the lowest relief valve setting as determined by review of the latest bench test data available on the relief valves in place at the time of the hydrostatic test. Thirty psig is considered a minimal margin to allow for pressure control while recognizing the tolerance of the relief valve settings and the accuracy of the pressure-indicating devices. The temperature will be maintained below 212°F and above 185°F, which is the minimum vessel temperature allowed by Technical Specifications at 1075 psig reactor pressure.

2.4.4.4 Alternate to Section XI Requirements

The only alternative that permits meeting the Code at temperatures less than 212°F is removal of the relief valves. This job is expensive both in dollars and in man-rem and would result in lengthening the refueling outage because such work would be on the critical path to returning the reactor to service. It is concluded that adequate confidence in the structural integrity of the Class 1 systems and components can be gained by the proposed hydrostatic test and that removal of the relief valves to permit testing to a slightly higher pressure is not justified.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
REACTOR PRESSURE VESSEL					
B1.10	B-A	Longitudinal and Circumferential Shell Weld	Volumetric	100% of one circumferential and one longitudinal beltline weld length. See Subsection 2.4.1 for Request for Relief.	May be examined at or near the end of each inspection interval.
B1.20	B-A	Meridional and Circumferential Head Weld	Volumetric	100% of accessible length of one meridional and circumferential weld of the closure head and bottom head.	May be examined at or near the end of each inspection interval for the bottom head.
B1.30	B-A	Shell-to-Flange	Volumetric	100% of circumferential weld.	At least 50% of the weld shall be examined by the end of the first inspection period, and the remainder by the end of the third inspection period.
B1.40	B-A	Head-to-Flange	Volumetric/ Surface	100% of circumferential weld.	
B3.90 B3.100	B-D B-D	Primary Nozzle-to-Vessel Welds and Nozzle Inside Radius Section	Volumetric	100% of nozzles.	

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B4.10	B-E	Partial Penetrations	---	---	Items B4.11 through B4.13 are applicable.
B4.11	B-E	Vessel Nozzles	Visual (VT-2)	25% of each group of comparable size and function.	The examinations will be performed when the RPV is pressurized prior to operation.
B4.12	B-E	Control Rod Drive Nozzles	Visual (VT-2)	25% of each group of comparable size and function.	The examinations will be performed when the RPV is pressurized prior to operation.
B4.13	B-E	Instrumentation Nozzles	Visual (VT-2)	25% of each group of comparable size and function.	The examinations will be performed when the RPV is pressurized prior to operation.
B5.10	B-F	Nozzle-to-Safe End Welds $\leq$ 4 inches	Volumetric and Surface	All dissimilar metal welds at nozzles.	
B5.20	B-F	Nozzle-to-Safe End Welds > 4 inches	Surface	All dissimilar metal welds at nozzles.	Not Applicable.
B6.10	B-G-1	Closure Head Nuts	Surface	100% of nuts.	An augmented volumetric examination will be performed in accordance with IWA-2240 in place of the surface examination.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B6.20	B-G-1	Closure Studs, In Place	Volumetric	100% of studs.	
B6.30	B-G-1	Closure Studs, When Removed	Volumetric and Surface	100% of studs.	
B6.40	B-G-1	Threads in Flange	Volumetric	100% of threaded holes.	1 inch Annular Area around threaded hole.
B6.50	B-G-1	Closure Washers and Bushings	Visual (VT-1)	All washers, and bushings upon stud removal.	
B7.10	B-G-2	Pressure-Retaining Bolting 2 Inches and Less in Diameter	Visual (VT-1)	---	Not applicable.
B8.10	B-H	Integrally Welded Vessel Supports	Volumetric or Surface	100% of accessible area of the circumference of the weld to the vessel.	
B13.10	B-N-1	Vessel Interior	Visual (VT-3)	Accessible areas above and below reactor core.	To be examined during each inspection period.
B13.20	B-N-2	Interior Attachments Within Beltline Region	Visual (VT-1)	Accessible attachment welds.	To be examined at or near the end of the inspection interval.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B13.21	B-N-2	Interior Attachments Within Beltline Region	Visual (VT-3)	Accessible attachment welds.	To be examined at or near the end of the inspection interval.
B13.22	B-N-3	Core-Support Structures	Visual (VT-3)	Accessible surfaces.	To be examined at or near the end of the inspection interval.
B14.10	B-O	Control Rod Drive Housings	Volumetric or Surface	Welds in 10% of the peripheral CRD housings.	May be examined at or near the end of the inspection interval.
B15.10	B-P	Exempted Pressure-Retaining Components Defined by IWB-1220	Visual (VT-2)	All exempted components during system leakage test.	Examinations to be performed in accordance with IWB-5221 for each refueling outage.
B15.11	B-P	Exempted Pressure-Retaining Components Defined by IWB-1220	Visual (VT-2)	All exempted components during system hydrostatic test.	Examinations to be performed once in accordance with IWB-5222 at the end of the test interval.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
PIPING					
B5.130	B-F	Dissimilar Metal Welds $\geq$ 4 Inches	Volumetric and Surface	100% of the welds.	
B5.140	B-F	Dissimilar Metal Welds < 4 Inches	Surface	100% of the welds.	
B5.150	B-F	Dissimilar Metal Socket Welds	Surface	100% of the welds.	
B6.150	B-G-1	Bolts and Studs, > 2 Inches in Diameter in Place	---	---	Not applicable.
B6.160	B-G-1	Bolts and Studs, > 2 Inches in Diameter when removed.	---	---	Not applicable.
B6.170	B-G-1	Bolting	---	---	Not applicable.
B7.50	B-G-2	Bolting 2 Inches and Less in Diameter	Visual (VT-1)	100% of bolts, studs, and nuts.	May be examined in place under tension or when bolting is removed.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B9.11	B-J	Circumferential Pipe Welds $\geq$ 4 Inches in Diameter	Volumetric and Surface	25% of the circumferential butt welds.	
B9.12	B-J	Longitudinal Pipe Welds < 4 Inches in Diameter	Volumetric and Surface	Adjoining longitudinal welds for scheduled circumferential welds. One pipe-diameter length or 12 inches of each longitudinal weld length required.	
B9.21	B-J	Circumferential Welds < 4 Inches in Diameter	Surface	25% of the circumferential butt welds.	
B9.22	B-J	Longitudinal Pipe Welds < 4 Inches in Diameter	---	---	Not applicable.
B9.31	B-J	Branch Pipe Connection Welds $\geq$ 4 Inches or Larger in Diameter	Volumetric and Surface	25% of the branch connection joints.	
B9.32	B-J	Branch Pipe Connection Welds < 4 Inches in Diameter	Surface	25% of the branch connection joints.	

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B9.40	B-J	Socket Welds	Surface	25% of the socket welds.	
B10.10	B-K-1	Integrally Welded Supports	Volumetric or Surface	25% of the supports whose attachment base material is 5/8 inch or thicker.	
B15.50	B-P	Exempted Pressure-Retaining Components Defined by IWB-1220	Visual (VT-2)	All exempted components during system leakage test.	Examination to be performed in accordance with IWB-5221 for each refueling outage.
B15.51	B-P	Exempted Pressure-Retaining Components Defined by IWB-1220	Visual (VT-2)	All exempted components during system hydrostatic test.	Examination to be performed once in accordance with IWB-5222 at the end of the test interval.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
PUMPS					
B6.180	B-G-1	Bolts and Studs, 2 Inches in Diameter	Volumetric	All bolts and studs.	May be examined in place under tension, when connection is disassembled, or when the bolting is removed.
B6.190	B-G-1	Flange Surface for Bolting 2 Inches Diameter When Connection is disassembled	Visual (VT-1)	100% of the surfaces, including annular surface 1 inch around each stud hole.	Examine when diassembled.
B6.200	B-G-1	Nuts, Bushings, and Washers 2 Inches in Diameter	Visual (VT-1)	All nuts, bushings, and washers.	Examine when disassembled.
B7.60	B-G-2	Bolting, 2 Inches in Diameter or Less	Visual (VT-1)		Not applicable.
B10.20	B-K-1	Integrally Welded Attachments	Volumetric or Surface	25% of the attachment welds.	
B12.10	B-L-1	Pump Casing Welds	Surface	One reactor recirculation pump.	A surface examination will be performed in lieu of a volumetric examination. See Request for Relief, Subsection 2.4.2.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B12.20	B-L-2	Internal Surfaces of Pump Casings	Visual (VT-3)	One reactor recirculation pump.	An augmented UT surveillance program will be implemented as the primary examination. See Request for Relief, Subsection 2.4.2. A VT will be performed when pump is disassembled for maintenance purposes.
B15.60	B-P	Pressure-Retaining Boundary	Visual (VT-2)	All exempted components during system leakage test.	Examinations to be performed in accordance with IWB-5221 for each refueling outage.
B15.61	B-P	Pressure-Retaining Boundary	Visual (VT-2)	All exempted components during system hydrostatic test.	Examination to be performed in accordance with IWB-5222 at the end of the test interval.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
VALVES					
B6.210	B-G-1	Bolts and Studs, >2 Inches in Diameter	Volumetric	All bolts and studs.	
B6.220	B-G-1	Flange Surface for Bolting > 2 Inches in Diameter When Connection is Disassembled.	Visual (VT-1)	All surfaces and 1 inch annular area around each stud hole.	
B6.230	B-G-1	Nuts, Bushings, and Washers	Visual (VT-1)	All nuts, bushings, and washers.	
B7.70	B-G-2	Bolting < 2 Inches in Diameter	Visual (VT-1)	All bolts, studs, and nuts.	
B10.30	B-K-1	Integrally Welded Attachments	Volumetric or Surface	25% of the supports.	Attachments whose base material is 5/8 inch or greater in thickness.
B12.30	B-M-1	Valve Body Welds	---	---	Not applicable.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
B12.50	B-M-2	Internal Surfaces of Valve Bodies on Valves 4 Inches Nominal Pipe Size	Visual (VT-3)	One valve in each group of valves that is of the same construction and similar function.	An augmented UT surveillance program will be implemented as the primary examination. See Request for Relief, Subsection 2.4.3. A VT examination will be performed when the valve is disassembled for maintenance purposes.
B15.70	B-P	Pressure-Retaining Components	Visual (VT-2)	All exempted components during system leakage test.	Examinations to be performed in accordance with IWB-5221 for each refueling outage.
B15.71	B-P	Pressure-Retaining Components	Visual (VT-2)	All exempted components during system hydrostatic test.	Examination to be performed once in accordance with IWB-5222 at the end of the test interval.

TABLE 2.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1 COMPONENTS (Cont'd)

System	System Leakage Test	System Hydrostatic Test
Main Steam	Normal Operating Pressure	110% Operating Pressure
Main Recirculation	Normal Operating Pressure	110% Operating Pressure
Control Rod Hydrostatic Return	Normal Operating Pressure	110% Operating Pressure
Feedwater	Normal Operating Pressure	110% Operating Pressure
Residual Water Cleanup	Normal Operating Pressure	110% Operating Pressure
Reactor Core Isolation Cooling	Normal Operating Pressure	110% Operating Pressure
Core Spray	Normal Operating Pressure	110% Operating Pressure
High Pressure Coolant Injection	Normal Operating Pressure	110% Operating Pressure
Standby Liquid Control	Normal Operating Pressure	110% Operating Pressure

3. CLASS 2 PROGRAM

3.1 IDENTIFICATION OF COMPONENTS

The following systems or portions of systems have been classified as ASME Class 2 (equivalent):

(1) Standby Liquid Control System
(2) Reactor Core Isolation Cooling System
(3) Residual Heat Removal System
(4) Core Spray Cooling System
(5) High Pressure Coolant Injection System
(6) Portion of Fuel Pool Cooling and Cleanup System.
(7) CRD Scram Discharge Volume Piping
(8) Main Steam Lines beyond Outboard MSIV

3.1.1 STANDBY LIQUID CONTROL SYSTEM (SLC) ISI-M-358

The SLC system, beyond the check valve just outside primary containment, is classified Class 2 (equivalent) in accordance with Regulatory Guide 1.26, Section C.1.b., - system is important to safety and designed for reactor shutdown. Exemption from the ASME Section XI examination requirements of Table IWC-2500-1 is taken as follows:

> Entire Class 2 portion of the system is exempt per IWC-1220(c) - Four-inch nominal pipe size and smaller.

3.1.2 REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) ISI-M-359

The RCIC system, outside the outermost containment isolation valves and excluding the turbine and condenser, is classified as Class 2 (equivalent). While the RCIC system is not specifically covered by any of the definitions in Regulatory Guide 1.26, Section C.1, the system is considered important to safety in that its primary design function is to supplement the normal makeup systems during reactor shutdown, particularly during isolation from the main condenser. A secondary function of the RCIC system is to supplement the HPCI system in the event of loss of coolant; however, no credit has been taken for this function in the plant safety analysis. Exemptions from the ASME Section XI examination requirements of Table IWC-2500-1 are taken as follows:

> Some Class 2 portions are exempt per IWC-1220(b) - system is not required to operate above a pressure of 275 psig or above a temperature of 200°F. Other Class 2 portions are exempt per IWB-1220(c) - four-inch nominal pipe size and smaller.

3.1.3 RESIDUAL HEAT REMOVAL SYSTEM (RHR) ISI-M-361

The RHR system, outside the outermost containment isolation valves, is classified as Class 2 (equivalent) in accordance with Regulatory Guide 1.26, Sections C.1.a and C.1.b - portions of the system are

designed for emergency core cooling and portions are designed for residual heat removal. Exemptions from the ASME Section XI (1974 Edition and Addenda through the Summer 1975) examination requirements of Table IWC-2520 are taken as follows:

> Component connections, piping, valves, and vessels that are four-inch nominal pipe size and smaller are exempt per IWC-1220(d).

3.1.4 CORE SPRAY COOLING SYSTEM ISI-M-362

The Core Spray System, outside the outermost containment isolation valves, is classified Class 2 (equivalent) in accordance with Regulatory Guide 1.26, Section C.1.a - system is designed for emergency core cooling. Exemptions from the ASME Section XI (1974 Edition and Addenda through the Summer 1975) examination requirements of Table IWC-2520 are taken as follows:

> Component connections, piping, valves, and vessels that are four-inch nominal pipe size and smaller are exempt per IWC-1220(d).

3.1.5 HIGH PRESSURE COOLANT INJECTION SYSTEM (HPCI) ISI-M-365

The HPCI system, outside the outermost containment isolation valves, and excluding the turbine and condenser, is classified as Class 2 (equivalent) in accordance with Regulatory Guide 1.26, Section C.1.a, - system is designed for emergency core cooling. Exemptions from the ASME Section XI (1974 Edition and Addenda through the Summer 1975) examination requirements of Table IWC-2520 are taken as follows:

> Some Class 2 portions of the HPCI system are exempt per IWC-1220(b) - portions of the system are non-ECCS and do not function in normal operation. Other Class 2 portions of the HPCI system are exempted per IWC-1220(d) - Four-inch nominal pipe size and smaller.

3.1.6 FUEL POOL COOLING AND CLEANUP SYSTEM ISI-M-363

The portion of the Fuel Pool Cooling system that ties into the RHR system is basically a Class 3 system, however that portion which does not function in normal operation and cannot be tested adequately is classified as Class 2 (equivalent) in accorance with Regulatory Guide 1.26, Section C.2.a - system is designed for residual heat removal from spent fuel, does not operate during normal operation and cannot be tested adequately. Exemption from the ASME Section XI examination requirements of Table IWC-2500-1 is taken as follows:

> The entire Class 2 portion of the Fuel Pool Cooling System is exempt per IWC-1220(b) - system is not required to operate above a pressure of 275 psig or above a temperature of 200°F.

3.1.7 CONTROL ROD DRIVE SCRAM DISCHARGE VOLUME PIPING (CRD SDVP) ISI-M-356 AND ISI-M-357

The CRD SDVP system between the hydraulic control unit and up to and including the scram discharge header, is classified Class 2 (equivalent) in accordance with Regulatory Guide 1.26 Section C.1.b - system is important to safety and designed for reactor shutdown. Exemptions from the ASME Section XI examination requirements of Table IWC-2500-1 are taken as follows:

> Component connections, piping, valves, and vessels that are four-inch nominal pipe size and smaller are exempt per IWC-1220(c).

3.1.8 MAIN STEAM (MS) ISI-M-303

The MS lines beyond the outboard MSIV valves, is classified Class 2 (equivalent) in accordance with Regulatory Guide 1.26, Section C.1.6 - system is important to safety and designed for reactor shutdown.

3.2 EXAMINATION PROGRAM

The examination program for the second 10-year interval is for Class 2 pressure vessels, piping, pumps, and valves shall be completed during successive inspection intervals in accordance with Table IWC-2412-1. The examination of systems or portions of systems will be performed such that 100 percent of the required examinations will be performed per interval. Specific examination restrictions will be identified as the actual examinations proceed. The areas for examination are discussed in the following text and summarized in Table 3.2-1.

3.2.1 PRESSURE VESSELS

The only Class 2 pressure vessels in the system that require nondestructive testing are the residual heat removal (RHR) heat exchangers.

> Category C-A - Pressure-Retaining Welds in Pressure Vessels--Items C1.10, C1.20 and C1.30
>
> This category applies to head and shell and tube sheet-to-shell welds which are gross structural discontinuities. Welds in this category and the adjoining base metal will be volumetrically examined in accordance with the requirements of Section XI.
>
> Category C-B - Pressure-Retaining Nozzle Welds in Vessels--Items C2.10. C2.11, C2.20, C2.21, C2.22, C2.30, C2.31, and C2.32
>
> Nozzles in Class 2 pressure vessels are subject to volumetric examination. These examinations will cover 100 percent of the vessel attachment weld.

Category C-C - Integrally Welded Attachments--Item C3.10

The RHR heat exchangers are supported by rod hangers. Integrally welded supports on the pressure-retaining boundary with base material 3/4 inch or greater in thickness are subject to a surface examination.

Category C-D - Pressure-Retaining Bolting--Item C4.10

The bolting in the RHR heat exchangers is less than two inches in diameter.

Category C-H - Pressure-Retaining Components--Items C7.10 and C7.20

Vessel components exempted from volumetric or surface examinations under IWC-1220 will be visually (VT-2) examined for evidence of leakage during system pressure or component functional, and/or system hydrostatic tests (IWC-5221, IWC-5222).

3.2.2 PIPING

Category C-C - Integrally Welded Attachments for Piping--Item C3.20

Welded support attachments whose base material thickness is 3/4 inch or greater for components in the C-F category will be subjected to surface examination.

Category C-D - Pressure-Retaining Bolting Greater Than Two Inches in Diameter--Item C4.20

There is no bolting exceeding two inches in diameter.

Category C-F - Pressure-Retaining Welds in Piping--Items C5.10 through C5.32

For piping welds less than or equal to 1/2 inch in nominal wall thickness, a surface examination will be performed. For piping welds greater than 1/2 inch in nominal wall thickness, a surface and volumetric examination will be performed. Branch connections greater than 4 inches in nominal branch pipe size will be subjected to a surface examination.

Category C-H - Pressure-Retaining Components--Items C7.30 and C7.40

Components of piping systems exempt from volumetric or surface examination under IWC-1220 will be visually (VT-2) examined for evidence of leakage during system pressure or component functional, and/or system hydrostatic tests (IWC-5221, IWC-5222).

3.2.3 PUMPS

Category C-C - Integrally Welded Attachments for Pumps--Item C3.30

Welded support attachments whose base material thickness is 3/4 inch or greater will be subjected to surface examination.

Category C-D - Pressure-Retaining Bolting Greater Than Two Inches in Diameter--Item C4.30

There is no bolting exceeding two inches in diameter.

Category C-G - Pressure-Retaining Welds in Pumps--Item C6.10

There are no pump casing welds in these systems.

Category C-H - Pressure-Retaining Components--Items C7.50 and C7.60

Pump components exempted from volumetric or surface examinations under IWC-1220 will be visually (VT-2) examined for evidence of leakage during system pressure or component functional, and/or system hydrostatic test (IWC-5221, IWC-5222).

3.2.4 VALVES

Category C-C - Integrally Welded Attachments for Valves--Item C3.40

Welded support attachments whose base material thickness is 3/4 inch or greater will be subjected to surface examination.

Category C-D - Pressure-Retaining Bolting Greater Than Two Inches in Diameter--Item C4.40

There is no bolting exceeding two inches in diameter.

Category C-G - Pressure-Retaining Welds in Valves--Item C6.20

There are no valves in these systems which have body welds.

Category C-H - Pressure-Retaining Components--Items C7.70 and C7.80

Valve components exempted from volumetric or surface examinations under IWC-1220 will be visually (VT-2) examined for evidence of leakage during system pressure or component functional, and/or system hydrostatic test (IWC-5221, IWC-5222).

3.3 SYSTEM PRESSURE TESTS

3.3.1 SYSTEM PRESSURE OR COMPONENT FUNCTIONAL TEST

Class 2 components will be subjected to the system pressure or component functional test requirements of IWC-5221. The tests scheduled to be performed during the second 10-year interval are shown in Table 3.2-1.

In accordance with IWC-5221, the operating pressure of the system and/or component functional test is acceptable as the system pressure test.

3.3.2 SYSTEM HYDROSTATIC TEST

Class 2 components will be subject to system hydrostatic test requirements of IWC-5222. The tests scheduled to be performed during the second 10-year interval are shown in Table 3.2-1.

In accordance with IWC-5222(c), open-ended portions of nonclosed systems extending to the first shutoff valve are exempted from the test requirements of IWC-5000 and IWA-5000. Examples of this exemption include suction lines from the torus, test lines, and minimum flow recirculation lines which discharge to the torus, containment spray lines, torus spray lines and turbine exhaust lines to the torus. For these lines, demonstration of an open flow path will be accomplished in lieu of pressure testing.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
PRESSURE VESSELS					
C1.10	C-A	Shell circumferential welds	Volumetric	100% of each weld.	Applies to gross structural discontinuities.
C1.20	C-A	Head circumferential welds	Volumetric	100% of each weld.	
C1.30	C-A	Tube sheet-to-shell weld	Volumetric	100% of each weld.	
C2.10	C-B	Nozzles in vessels $\leq$ 1/2-in. nominal thickness	---	---	Not applicable.
C2.11	C-B	Nozzle-to-shell	Surface	100% of each weld.	Manways and hand holes are excluded.
C2.20	C-B	Nozzles in vessels > 1/2-in. nominal thickness	---	---	Not applicable.
C2.21	C-B	Nozzle-to-shell (or head) weld	Surface and Volumetric	100% of each weld.	Manways and hand holes are excluded.
C2.22	C-B	Nozzle inside radius section	Volumetric	100% of each weld.	Manways and hand holes are excluded.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS (CONT'D)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
C2.30	C-B	Nozzles with Reinforcing plate in vessel 7-1/2-Inch Nominal Thickness	---	---	Not applicable.
C2.31	C-B	Reinforcing plate welds to nozzle-to-vessel	Surface	100% of each weld.	Manways and hand holes are excluded.
C2.31	C-B	Nozzle-to-shell (or head) welds inside vessel accessible/ inaccessible	Volumetric/ Visual (VT-2)	100% of each weld.	Manways and hand holes are excluded.
C3.10	C-C	Integrally welded attachments	Surface		Attachments whose base material is 3/4 in. or greater.
C4.10	C-D	Bolts and studs	Volumetric		Not applicable.
C7.10	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examinations to be performed in accordance with IWC-5221 for each refueling outage.
C7.20	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examinations to be performed in accordance with IWC-5222 at the end of each test interval.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS (CONT'D)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements for 10-Year Interval	Remarks
PIPING					
C3.20	C-C	Integrally welded attachments	Surface	100% of the support Attachment welds in the pressure-retaining boundary.	Attachments whose base material is 3/4 in. or greater.
C4.20	C-D	Bolts and studs	Volumetric		Not applicable Bolting 2 in.
C5.11	C-F	Circumferential welds 1/2-in. nominal wall thickness	Surface	See note below.	
C5.12	C-F	Longitudinal welds 1/2-in. nominal wall thickness	Surface	See note below.	
C5.21	C-F	Circumferential welds 1/2-in. nominal wall thickness	Surface and Volumetric	See note below.	
C5.22	C-F	Longitudinal welds 1/2-in. nominal wall thickness	Surface and Volumetric	See note below.	

NOTE: The selection of Class 2 welds will be performed in accordance with the limitations imposed by 10CFR50.55a(b)(2). Welds for non-ECCS and non-RHR systems are selected based upon the criteria contained in the footnotes of Category C-F of Table IWC-2500-1. Piping welds in the RHR and ECCS are selected based upon the criteria contained in Category C-F of Table IWC-2520 of the 1974 Edition of Section XI with Addenda through Summer 1975.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS (CONT'D)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
C5.31	C-F	Circumferential pipe branch connection welds 4 Inches	Surface	See note below.	
C5.32	C-F	Longitudinal pipe branch connection welds 4 Inches	Surface	See note below.	
C7.30	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5221 for each refueling outage.
C7.40	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5222 at the end of each test interval.

NOTE: The selection of Class 2 welds will be performed in accordance with the limitations imposed by 10CFR50.55a(b)(2). Welds for non-ECCS and non-RHR systems are selected based upon the criteria contained in the footnotes of Category C-F of Table IWC-2500-1. Piping welds in the RHR and ECCS are selected based upon the criteria contained in Category C-F of Table IWC-2520 of the 1974 Edition of Section XI with Addenda through Summer 1975.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS (CONT'D)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
PUMPS					
C3.30	C-C	Integrally welded attachments	Surface		Attachments whose base material is 3/4 in. or greater.
C4.30	C-D	Bolts and studs	Volumetric		Not applicable Bolting < 2 in.
C6.10	C-G	Pump casing welds	Surface		Not applicable.
C7.50	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5221 for each refueling outage.
C7.60	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5222 at the end of each test interval.

TABLE 3.2-1

INSERVICE INSPECTION PROGRAM

CLASS 2 COMPONENTS (CONT'D)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
VALVES					
C3.40	C-C	Integrally welded attachments	Surface	100% of the support attachment welds in the pressure-retaining boundary.	Attachments whose base material is 3/4 in. or greater.
C4.40	C-D	Bolts and studs	Volumetric		Not applicable Bolting < 2 in.
C6.20	C-G	Valve body welds	Surface		Not applicable.
C7.70	C-H	Pressure-Retaining Components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5221 for each refueling outage.
C7.80	C-H	Pressure-Retaining components	Visual (VT-2)	100% of pressure-retaining boundary.	Examination to be performed in accordance with IWC-5222 at the end of each test interval.

TABLE 3.2-1

SYSTEM PRESSURE TESTS

CLASS 2 COMPONENTS

System	System Pressure Test[1] or Component Functional Test	System Hydrostatic Test[2]
Core Spray Cooling	Normal Operating Pressure	125% Operating Pressure
High Pressure Coolant Injection	Normal Operating Pressure	110% Operating Pressure
Reactor Core Isolation Cooling	Normal Operating Pressure	110% Operating Pressure
Standby Liquid Control	Normal Operating Pressure	110% Operating Pressure
Fuel Pool Cooling	Normal Operating Pressure	110% Operating Pressure
Reactor Heat Removal	Normal Operating Pressure	125% Operating Pressure
CRD Scram Discharge Volume Piping	Normal Operating Pressure	110% Operating Pressure

NOTES

(1) System pressure test or component functional test will be performed in accordance with IWC-5221 requirements with inspection per IWA-5000.

(2) System hydrostatic test will be conducted once at or near the end of each inspection interval in accordance with IWC-5222 requirements.

4. CLASS 3 PROGRAM

4.1 IDENTIFICATION OF COMPONENTS

The following systems or portions of systems have been classified as ASME Class 3 (equivalent):

a. Emergency service water system

b. High pressure service water system

c. Emergency cooling system

d. Portion of fuel pool cooling and cleanup system

4.1.1 EMERGENCY SERVICE WATER SYSTEM (ESW) ISI-M-315

The ESW system is classified Class 3 (equivalent) in accordance with Regulatory Guide 1.26, Section C.2.b - system is designed for functioning of components important to safety including diesels and ECCS pump room unit coolers.

4.1.2 HIGH PRESSURE SERVICE WATER SYSTEM (HPSW) ISI-M-315, 361

The HPSW system is classified Class 3 (equivalent) in accordance with Regulatory Guide 1.26, Section C.2.a - system is important to safety and designed to supply cooling water for post-accident heat removal and normal residual heat removal.

4.1.3 EMERGENCY COOLING SYSTEM ISI-M-330

The Emergency Cooling System is classified Class 3 (equivalent) in accordance with Regulatory Guide 1.26, Sections C.2.a and C.2.b - system is important to safety and designed to supply a source of cooling water for residual heat removal and for functioning of other components such as diesels. Open-ended portions of the system will be examined in accordance with the test requirements of ASME Section XI, IWD-5223(d) and (e).

4.1.4 FUEL POOL COOLING AND CLEANUP SYSTEM ISI-M-363

The portion of the Fuel Pool Cooling system that ties into the RHR system (excluding that part taken as Class 2) is classified Class 3 (equivalent) in accordance with Regulatory Guide 1.26, Section C.2.a - system is designed for residual heat removal from the spent fuel. This system also provides a source of makeup water for the pool in the event normal cooling is lost and the pool is allowed to boil. Open-ended portions of the system will be examined in accordance with the test requirements of ASME Section XI, IWD-5223(c) and (d).

4.2 EXAMINATION PROGRAM

The pressure-retaining Class 3 components within each system boundary shall be subjected to the inservice system pressure tests and visual examinations as specified in Table IWD-2500-1 during the second 10-year interval. The examination program for Class 3 components is shown in Table 4.2-1.

4.2.1 SYSTEMS IN SUPPORT OF REACTOR SHUTDOWN FUNCTION

Category D-A Pressure-Retaining Component and Integral Attachments--Items D1.10 through D1.60

Pressure-retaining components subjected to pressure tests per IWA-5000 will be visually (VT-2) examined for evidence of leakage during system inservice and/or system hydrostatic tests (IWD-5221, IWD-5223). Integral Attachments for components exceeding 4-inch nominal pipe size whose structural integrity is relied upon to withstand desgin loads during sytem function will be visually (VT-3) examined.

4.2.2 SYSTEMS IN SUPPORT OF EMERGENCY CORE COOLING, CONTAINMENT HEAT REMOVAL, ATMOSPHERE CLEANUP, AND REACTOR RESIDUAL HEAT REMOVAL

Category D-B Pressure-Retaining Components and Integral Attachments--Items D2.10 through D2.60

Pressure-retaining components subjected to pressure tests per IWA-5000 will be visually (VT-2) examined for evidence of leakage during system functional and/or system hydrostatic tests (IWD-5222, IWD-5223). Integral attachments for components exceeding 4-inch nominal pipe size whose structural integrity is relied upon to withstand design loads during system function will be visually (VT-3) examined.

4.2.3 SYSTEMS IN SUPPORT OF RESIDUAL HEAT REMOVAL FROM SPENT FUEL STORAGE POOL

Category D-C Pressure-Retaining Components and Integral Attachments--Items D3.10 through D3.60

Pressure-retaining components subjected to pressure tests per IWA-5000 will be visually (VT-2) examined for evidence of leakage during system pressure and/or hydrostatic pressure tests (IWD-5221, IWD-5223). Integral attachments for components exceeding 4-inch nominal pipe size whose structural integrity is relied upon to withstand design loads during system function will be visually (VT-3) examined.

4.3 SYSTEM PRESSURE TESTS

4.3.1 SYSTEM INSERVICE TEST

Class 3 components will be subjected to the system inservice test in accordance with the requirements specified in IWA-5211(c) and conducted in accordance with IWD-5221. The test scheduled to be performed during the second 10-year interval is shown in Table 4.2-1.

4.3.2 SYSTEM FUNCTIONAL TEST

Class 3 components will be subjected to the system functional test in accordance with the requirements specified in IWA-5211(b) and conducted in accordance with IWD-5222. The operating pressure of the system functional test shall be acceptable as the system test pressure. The tests scheduled to be performed during the second 10-year interval are shown in Table 4.2-1.

4.3.3 SYSTEM HYDROSTATIC TEST

Class 3 components will be subjected to the system hydrostatic test requirements of IWA-5211(d) and conducted in accordance with IWD-5223, as applicable. Open ended portions of a system extending to the first shutoff valve and buried system components should be exempted from pressure test and from examination where accessibility is restricted. The test scheduled to be performed during the second 10-year interval are shown in Table 4.2-1.

4.4 REQUEST FOR RELIEF FROM SECTION XI REQUIREMENTS

4.4.1 REQUEST FOR RELIEF

4.4.1.1 Components

High Pressure Service Water (HPSW) System, Emergency Service Water (ESW) System, Emergency Cooling System.

4.4.1.1 Requirement from which Relief Requested

IWD-5223(a) - System test pressure at least 1.10 times the system design pressure.

4.4.1.3 Justification

Testing these systems to 110 percent design pressure is beyond the capability of the system pumps and therefore would require the use of a special hydrostatic test pump. The available test connections on these systems are 3/4 and 1 inch lines and would sharply limit the inflow capability from the hydrostatic pump, thereby necessitating leak-tightness of system 14-, 16-, 20-, and 24-inch valves to successfully perform the tests. Such leak-tightness is not otherwise a requirement for systems of this type and considerable maintenance expense would

be required to make the valves leak-tight for test purposes only. In addition, testing to 110 percent design pressure would require taking the entire ESW or HPSW system out of service at the same time which would require the cessation of all shutdown cooling. For the above reasons, we conclude that a hydrostatic test to 110 percent design pressure is impractical for systems of this type.

Testing to 110 percent of operating pressure is practical and could be accomplished using the system pumps and throttling at the cooling tower inlet valves - MO-48-0502 (A, B, C) for the HPSW system and MO-48-0501 (A, B, C) for the ESW system. Testing in this manner will provide adequate assurance of the structural integrity of these systems.

4.4.1.4 Testing in Lieu of Section XI Requirements

The HPSW system, the ESW system, and their respective portions of the Emergency Cooling Systems will be pressure tested to 1.10 times the system operating pressure.

Table 4.2-1

INSERVICE INSPECTION PROGRAM

CLASS 3 COMPONENTS

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
D1.10	D-A	Pressure-Retaining Components in support of reactor shutdown function	Visual (VT-2)	All Components are subject to a system inservice and/or system hydrostatic test.	Examination to be performed in accordance with IWD-5221 for each inspection period and/or performed once in accordance with IWD-5223 at the end of the inspection interval.
D1.20 through D1.60	D-A	Integral attachments (i.e., supports, restraints, mechanical and hydraulic snubbers and shock absorbers)	Visual (VT-3)	All attachments.	To be examined during each inspection period.
D2.10	D-B	Pressure-Retaining Components in support of ECCS, RHR, AC, and RRHR	Visual (VT-2)	All components are subject to a component functional test and/or system hydrostatic test.	Examination to be performed in accordance with IWD-5222 for each inspection period and/or to be examined once in accordance with IWD-5223 at the end of the inspection interval.

Table 4.2-1

INSERVICE INSPECTION PROGRAM

CLASS 3 COMPONENTS (Cont'd)

Item No.	Category	Components & Parts To Be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
D2.20 through D2.60	D-B	Integral attachments (i.e. - supports, restraints, mechanical and hydraulic snubbers, and shock absorbers)	Visual (VT-3)	All attachments.	To be performed during each inspection period.
D3.10	D-C	Pressure-Retaining Components in support of RHR and Spent FSP	Visual (VT-2)	All components are subject to system inservice and/or system hydrostatic test.	Examination to be performed in accordance with IWD-5221 for each inspection period and/or to be examined once in accordance with IWD-5223 at the end of the inspection interval.
D3.20 through D3.60	D-C	Integral Attachments (i.e., - supports, restraints, mechanical and hydraulic snubbers, and shock absorbers)	Visual (VT-3)	All attachments.	To be performed during each inspection period.

TABLE 4.2-1

SYSTEM PRESSURE TESTS

CLASS 3 COMPONENTS (Cont'd)

System	System Inservice or System Functional Test	System Hydrostatic Test
Emergency Service Water	Normal Operating Pressure	110% Operating Pressure
High Pressure Service Water	Normal Operating Pressure	110% Operating Pressure
Emergency Cooling System	Normal Operating Pressure	110% Operating Pressure
Fuel Pool Cooling System	Normal Operating Pressure	Exempt per IWD-5223(c) & (d)

NOTES: (1) System Inservice test will be conducted in each one-third inspection interval where System Hydrostatic Test is not performed. The nominal operating pressure of the System Function test shall be acceptable as the System test pressure (IWD-5222).

(2) System Hydrostatic Test will be conducted once per 10-year inspection interval. [IWA-5211(d)].

5. CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORT PROGRAM

5.1 GENERAL

The ISI program for component supports has been developed in accordance with the requirements of Subsection IWF of the 1980 Edition of Section XI with Addenda through Winter 1981. Details of the inservice test program for component supports with requests for relief from Section XI requirements are identified in this section.

5.2 INSERVICE INSPECTION PROGRAM FOR CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORTS

ISIs will be performed either during normal system operation or plant outages. The required examinations will be completed in accordance with the inspection schedule established for the components under IWB, IWC, and IWD as shown on Table 5.2-1.

5.3 REQUEST FOR RELIEF FROM SECTION XI REQUIREMENTS

5.3.1 REQUEST FOR RELIEF

5.3.1.1 Components

Hydraulic and mechanical shock suppressors for Class 1, Class 2, and Class 3 piping, pumps and valves.

5.3.1.2 Requirement from Which Relief Requested

Table IWF-2500-1, Category F-C, Item F3.50 requires visual examination (VT-4) of all spring type supports, constant load type supports, shock absorbers, and hydraulic and mechanical type snubbers once per inspection interval.

5.3.1.3 Justification

The hydraulic and mechanical shock suppressors for Class 1, Class 2, and Class 3 systems are currently subjected to an ongoing inspection and testing program detailed in the plant Technical Specifications. This program is designed to demonstrate continued operational readiness and structural integrity of the shock suppressors.

5.3.1.4 Inspection in Lieu of Section XI Requirements

Hydraulic and mechanical shock suppressors will be inspected and tested in accordance with Technical Specification requirements.

TABLE 5.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORTS

Item No.	Category	Components & Parts To be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
Plate and Shell Type Supports					
F1.10	F-A	Mechanical connections to Pressure-Retaining Components and building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F1.20	F-A	Weld connections to building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F1.30	F-A	Weld and mechanical connections at intermediate joints in multiconnected integral and non-integral supports	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F1.40	F-A	Component displacement settings of guides and stops, misalignment of supports, assembly of support items	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.

TABLE 5.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORTS (Cont'd)

Item No.	Category	Components & Parts To be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
Linear Type Supports					
F2.10	F-B	Mechanical connections to Pressure-Retaining Components and building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F2.20	F-B	Weld components to building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F2.30	F-B	Weld and mechanical connections at intermediate joints in multiconnected integral and non-integral supports	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F2.40	F-B	Component and displacement settings of guides and stops, misalignment of supports, assembly of support items	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.

TABLE 5.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORTS (Cont'd)

Item No.	Category	Components & Parts To be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
Components Standard Supports					
F3.10	F-C	Mechanical connections to Pressure-Retaining Components and building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F3.20	F-C	Weld connections to building structure	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F3.30	F-C	Weld and mechanical connections at intermediate joints in multiconnected integral and non-integral supports	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.
F3.40	F-C	Component displacement settings of guides and stops, misalignment of supports, assembly of support items	Visual (VT-3)	Each inspection interval.	Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.

TABLE 5.2-1

INSERVICE INSPECTION PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 COMPONENT SUPPORTS (Cont'd)

Item No.	Category	Components & Parts To be Examined	Method	Examination Requirements For 10-Year Interval	Remarks
Components Standard Supports (Cont'd)					
F3.50	F-C	Spring type supports, constant load type supports, shock absorbers, hydraulic and mechanical type snubbers	Visual (VT-4)	Each inspection interval.	See Request for Relief Subsection 5.3.1. Examination boundaries established in accordance with IWF-1300 and components selected in accordance with IWF-2510.

APPENDIX A

BOUNDARY DRAWINGS

APPENDIX A

BOUNDARY DRAWINGS

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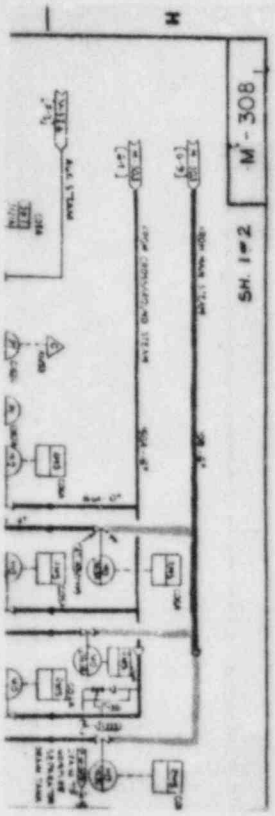

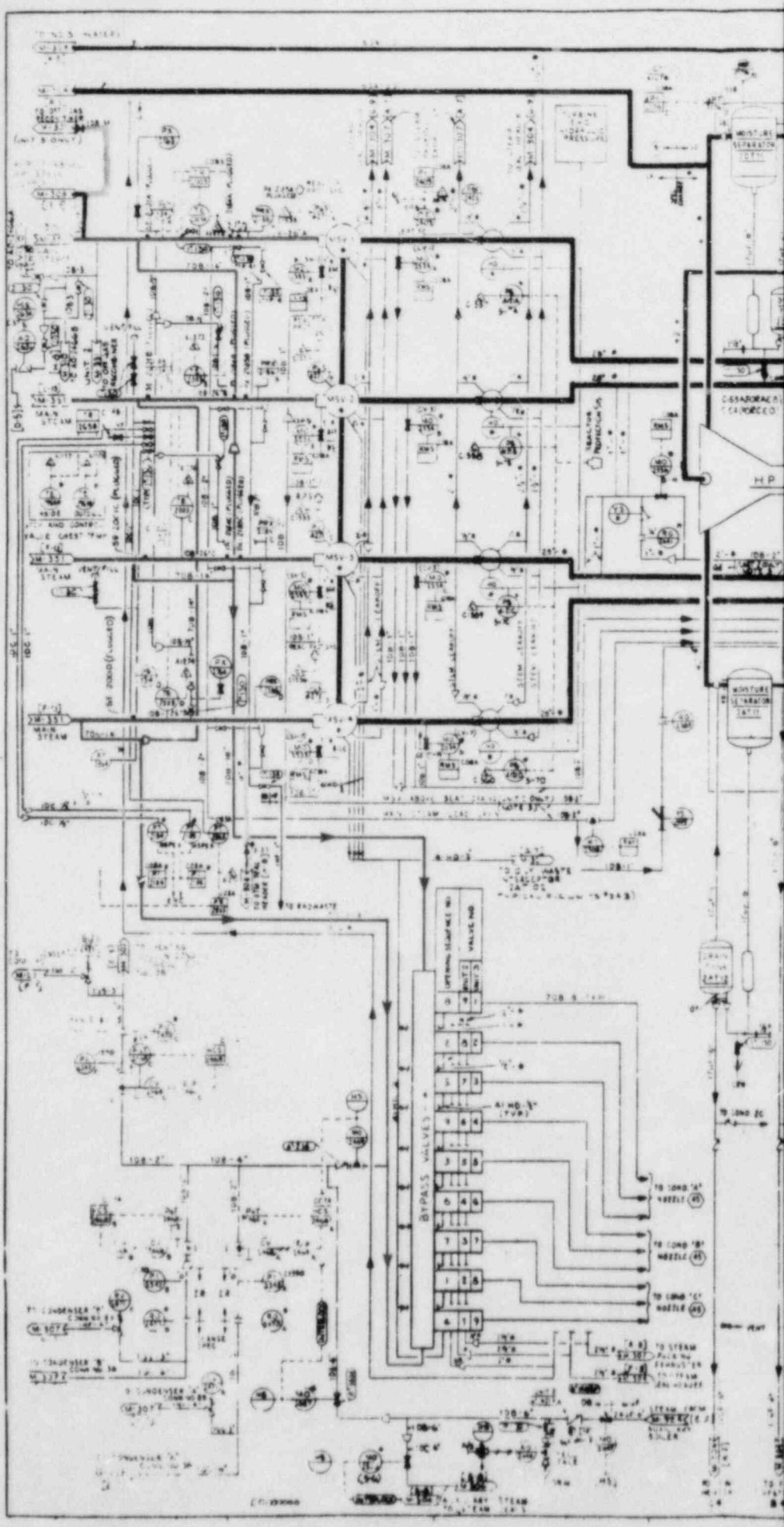

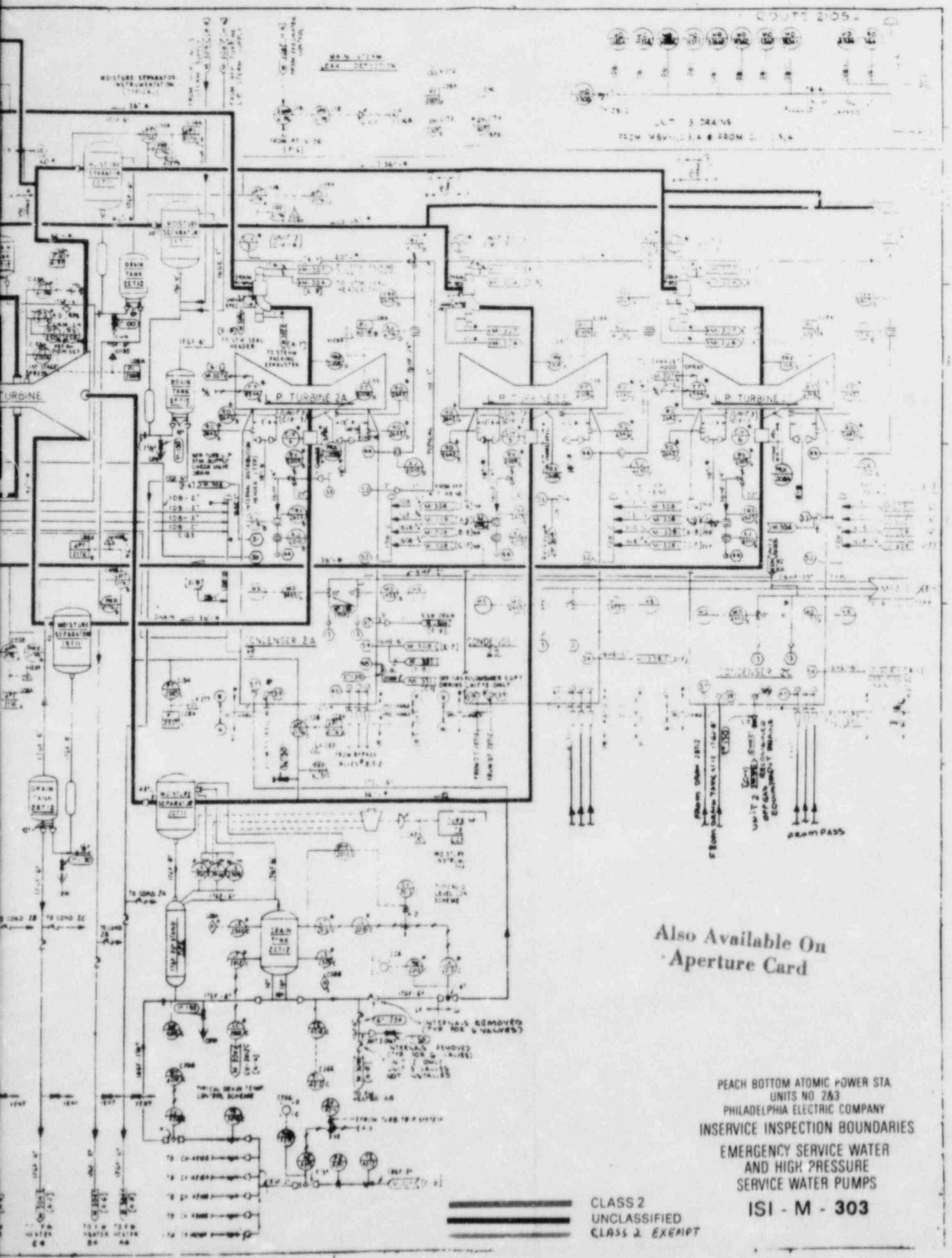

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PHILADELPHIA ELECTRIC COMPANY

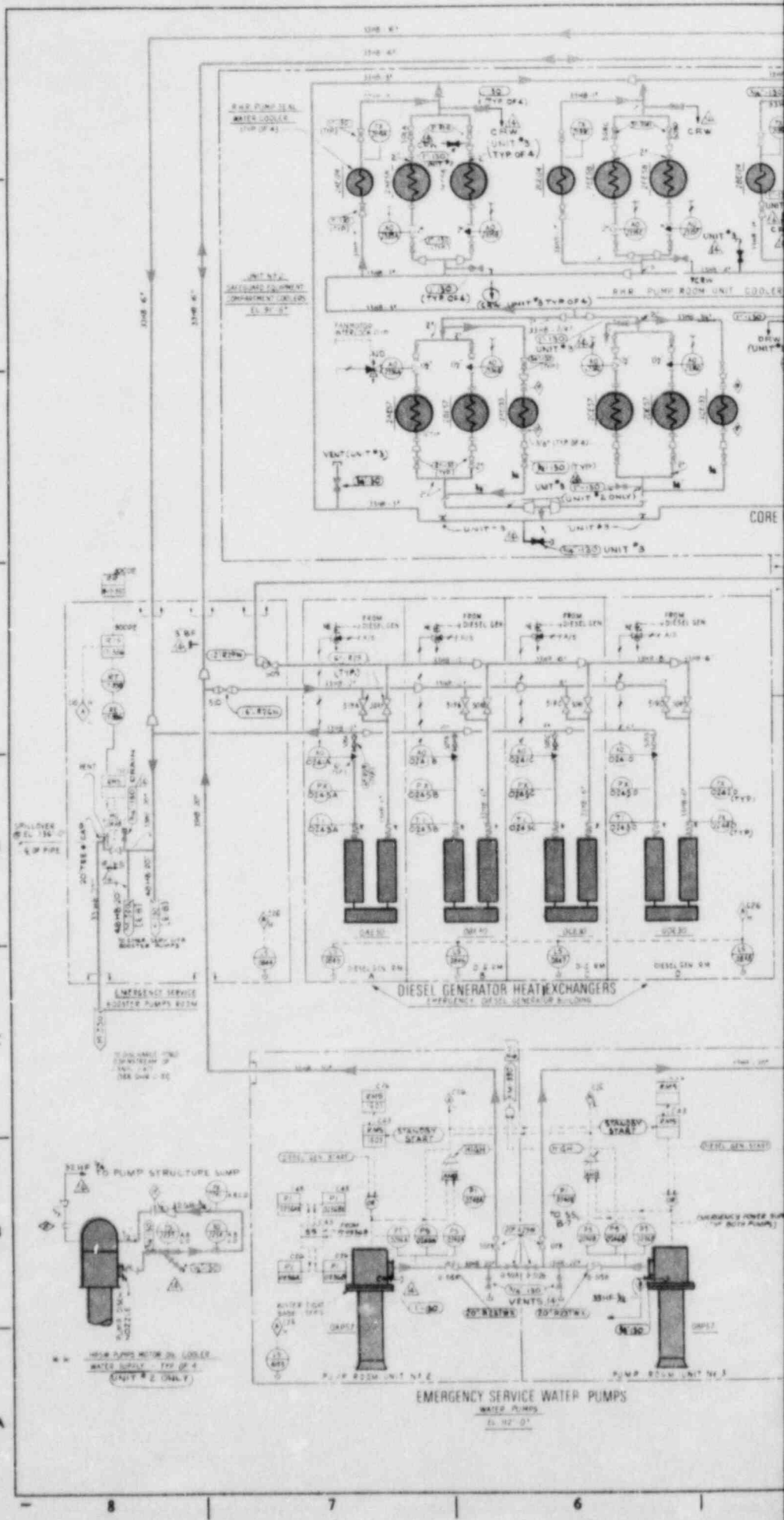
INSERVICE INSPECTION BOUNDARIES

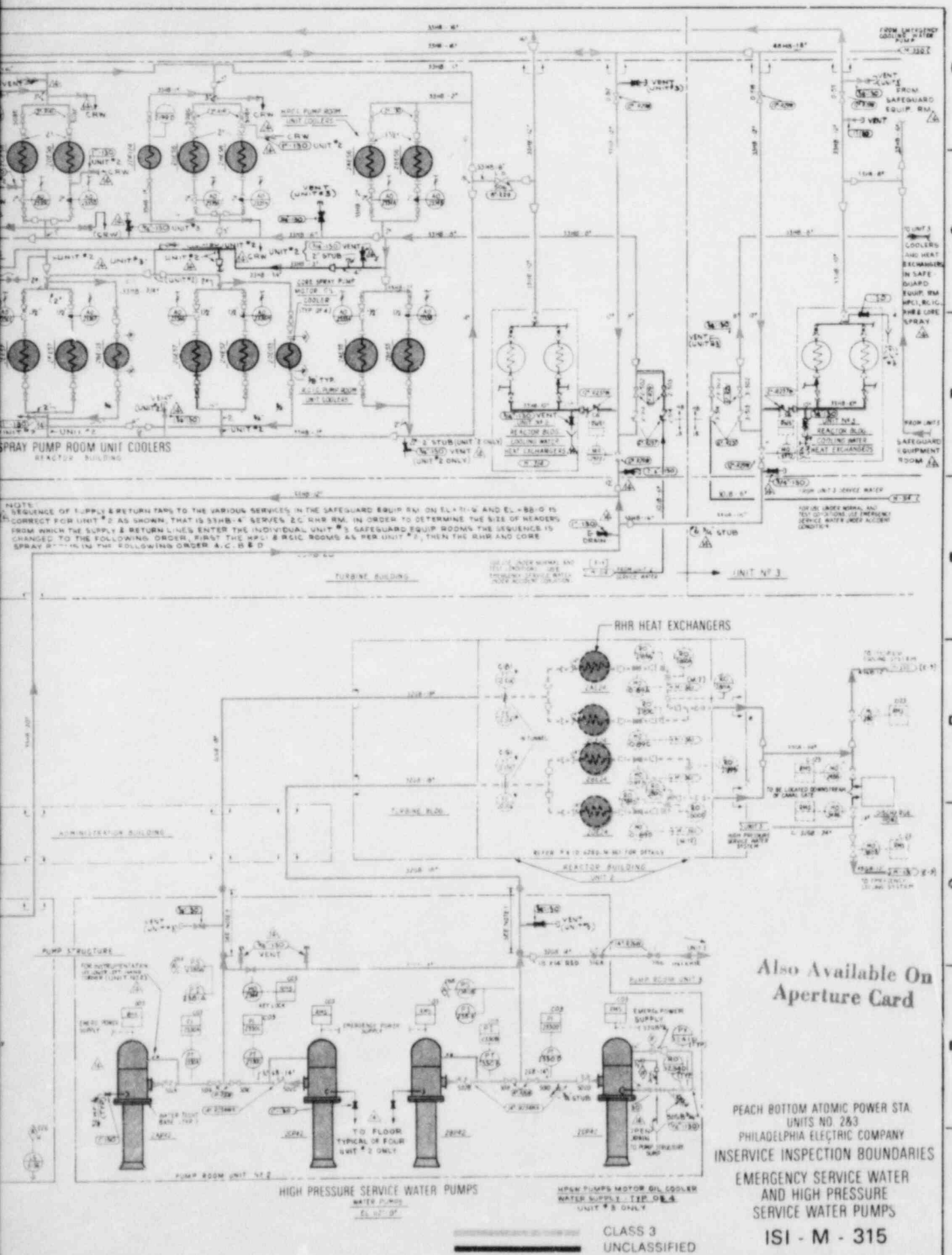
EMERGENCY SERVICE WATER
AND HIGH PRESSURE
SERVICE WATER PUMPS

ISI - M - 303

CLASS 2
UNCLASSIFIED
CLASS 2 EXEMPT

TI
APERTURE
CARD





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INSERVICE INSPECTION BOUNDARIES

EMERGENCY SERVICE WATER
AND HIGH PRESSURE
SERVICE WATER PUMPS

ISI - M - 315

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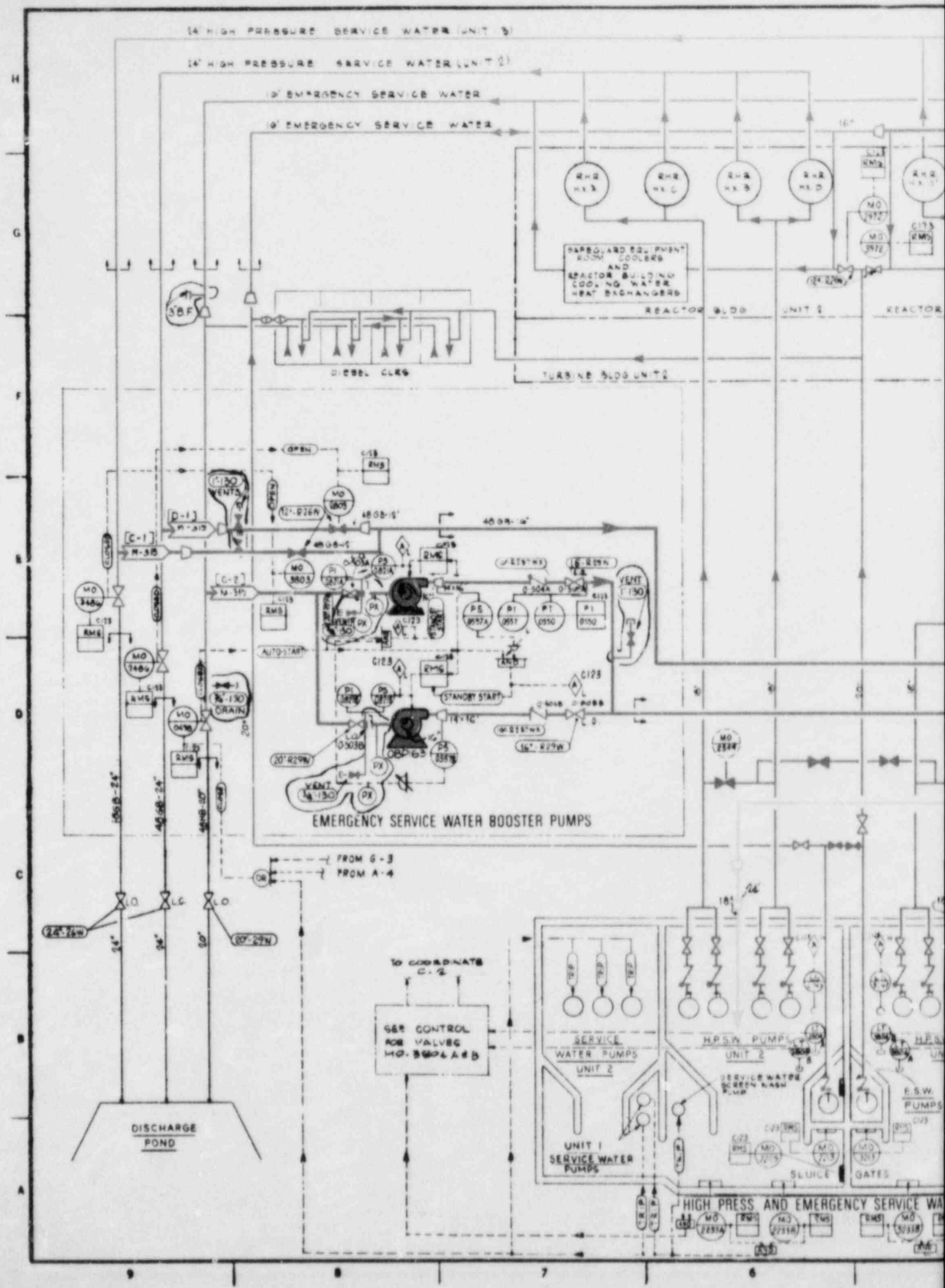
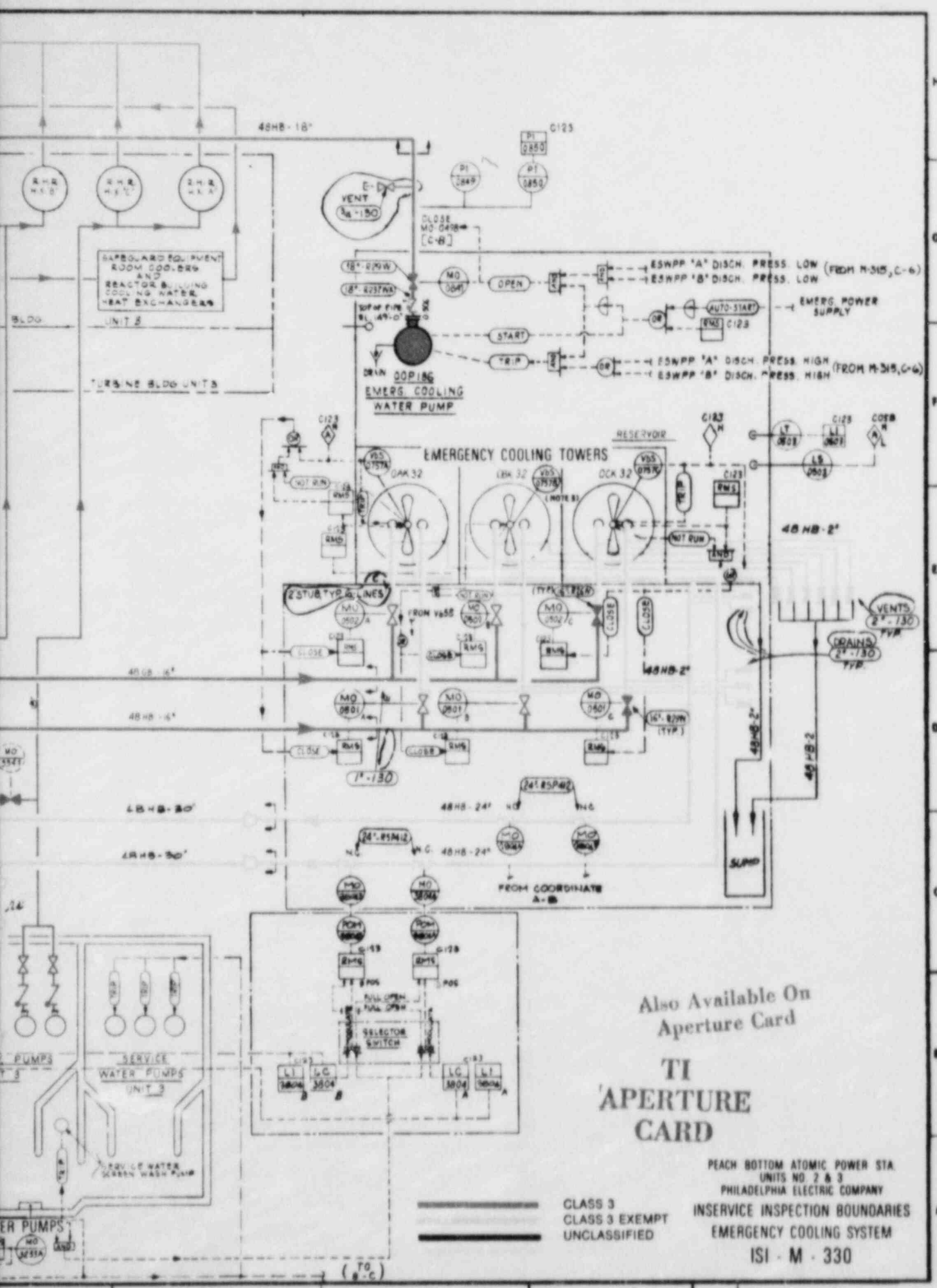
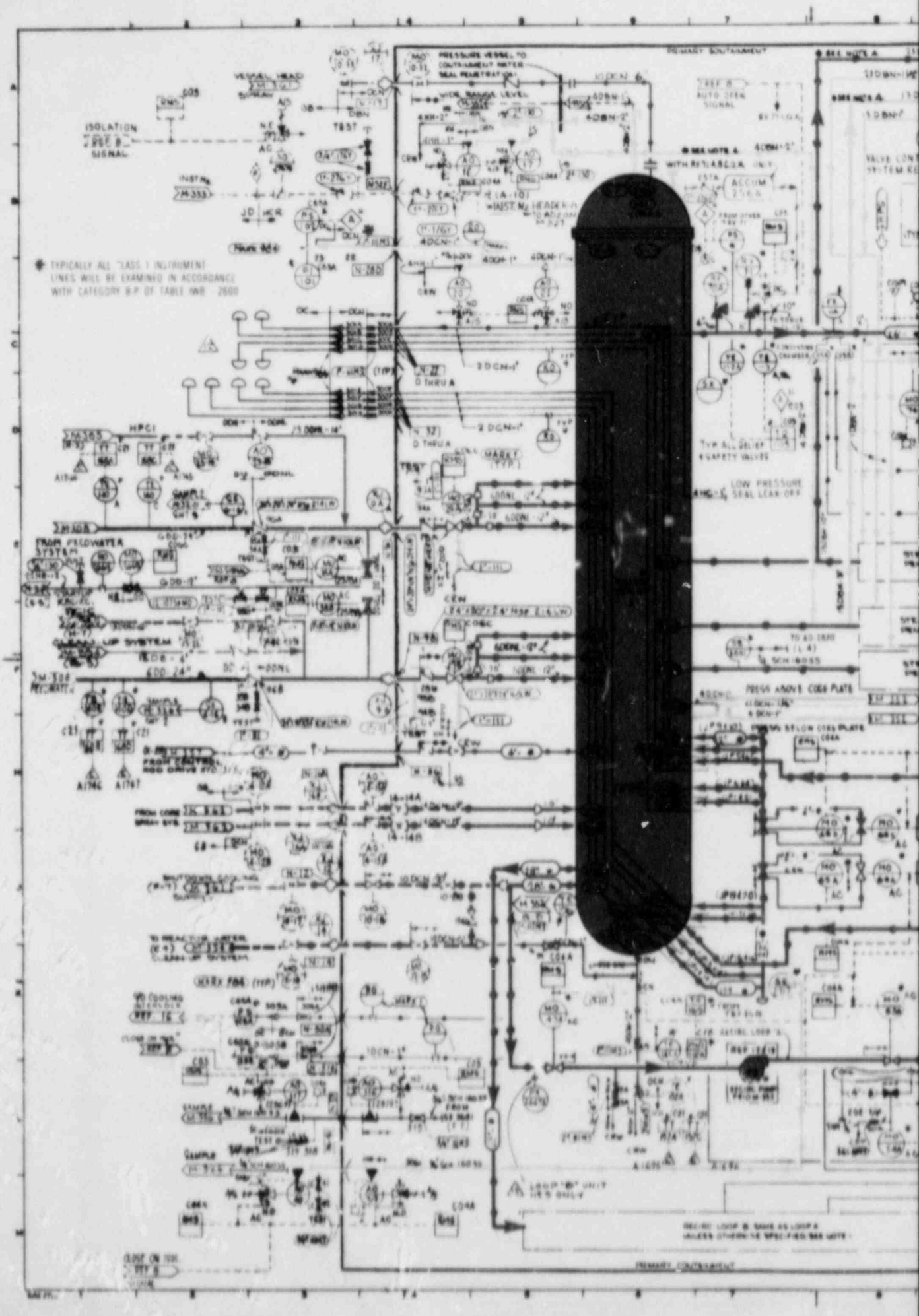
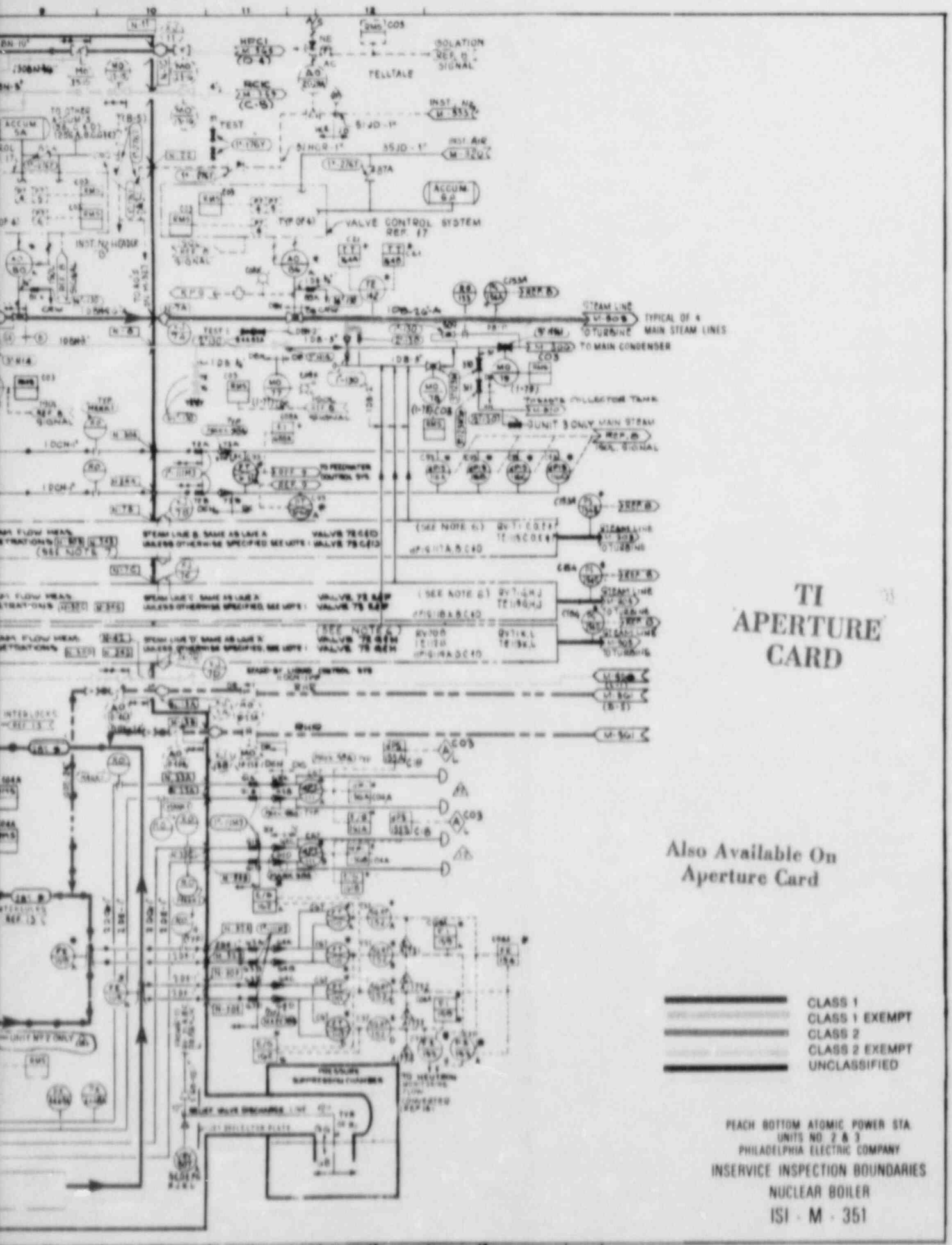

14" HIGH PRESSURE SERVICE WATER (UNIT 3)
14" HIGH PRESSURE SERVICE WATER (UNIT 2)
10" EMERGENCY SERVICE WATER
10" EMERGENCY SERVICE WATER
RHR HX A
RHR HX C
RHR HX B
RHR HX D
SAFEGUARD EQUIPMENT ROOM COOLERS AND REACTOR BUILDING COOLING WATER HEAT EXCHANGERS
REACTOR BLDG UNIT 2
REACTOR
DIESEL GENS
TURBINE BLDG UNIT 2
EMERGENCY SERVICE WATER BOOSTER PUMPS
AUTO-START
STANDBY START
FROM G-3
FROM A-4
TO COORDINATE C-2
SGT CONTROL FOR VALVES MO-3804 A & B
SERVICE WATER PUMPS UNIT 2
H.P.S.W. PUMP UNIT 2
SERVICE WATER SCREEN WASH PUMP
E.S.W. PUMPS
UNIT 1 SERVICE WATER PUMPS
SLUICE GATES
DISCHARGE POND
HIGH PRESS AND EMERGENCY SERVICE WA
9
8
7
6




PRIMARY CONTAINMENT
PRESSURE VESSEL TO CONTAINMENT WATER SEAL PENETRATION
ISOLATION SEE B SIGNAL
TYPICALLY ALL "CLASS 1 INSTRUMENT LINES WILL BE EXAMINED IN ACCORDANCE WITH CATEGORY B-P OF TABLE IWB - 2600
HPCI
FROM FEEDWATER SYSTEM
LOW PRESSURE SEAL LEAK OFF
PRESS ABOVE CORE PLATE
PRIMARY CONTAINMENT



Also Available On
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CLASS 1
CLASS 1 EXEMPT
CLASS 2
CLASS 2 EXEMPT
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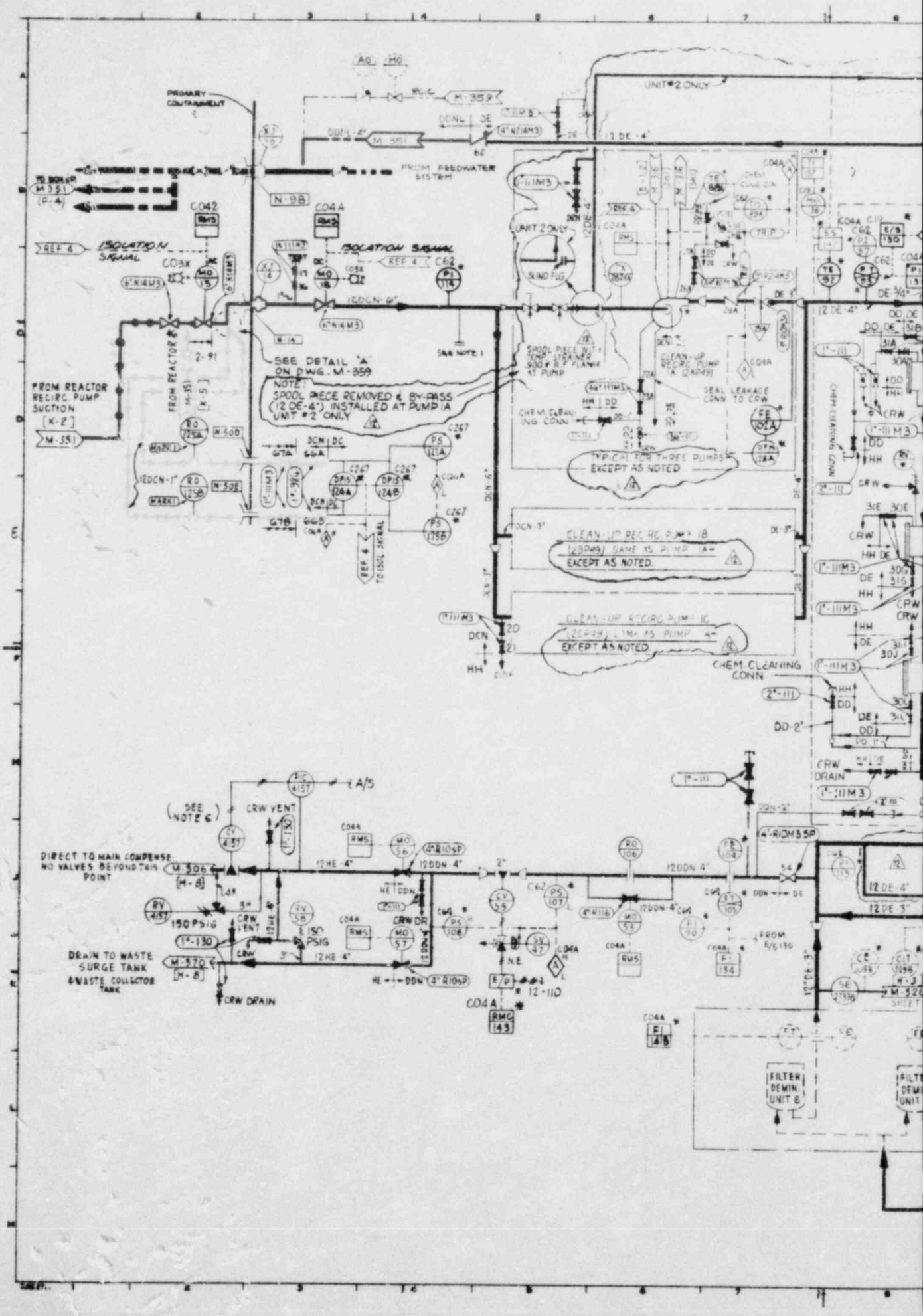
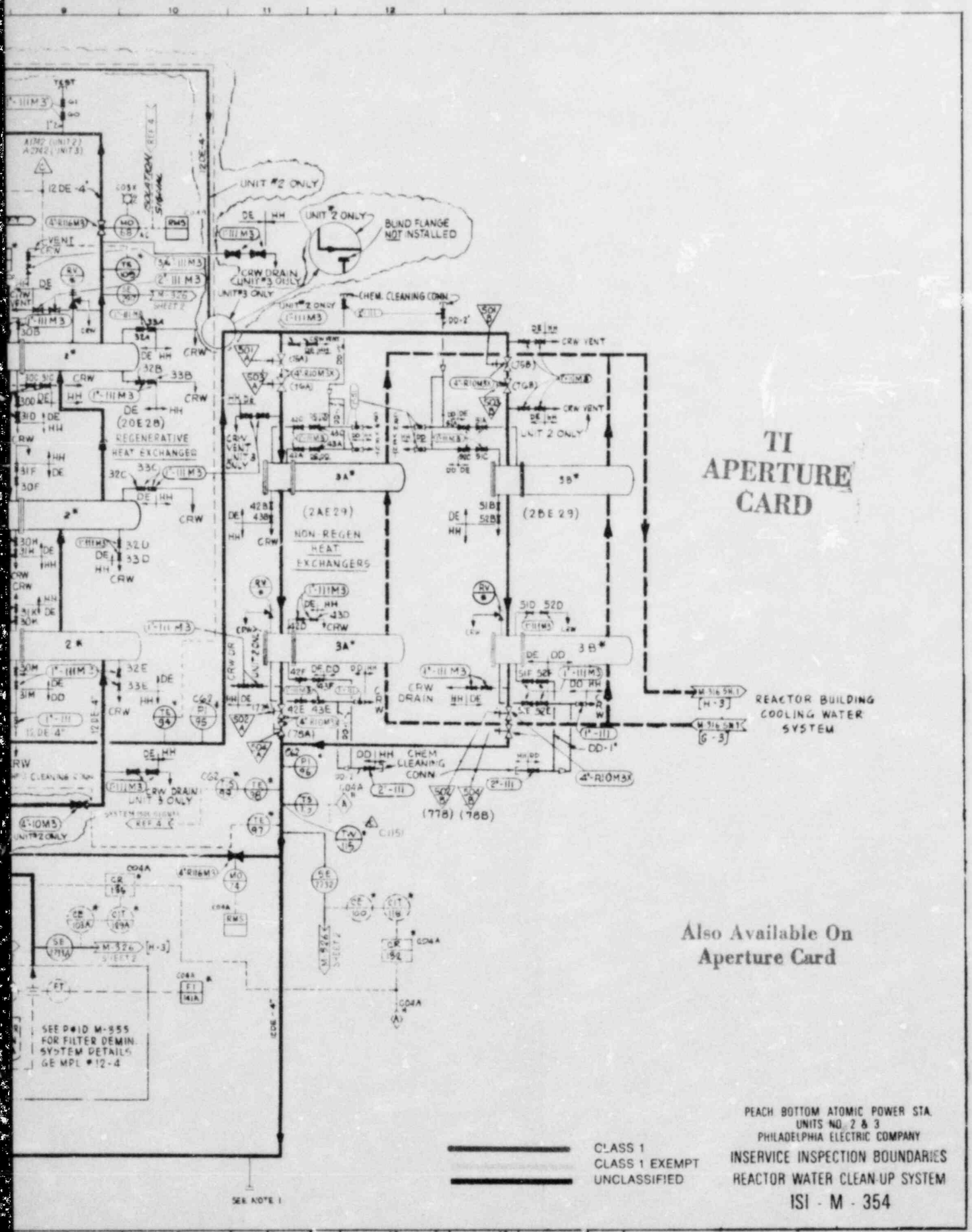
INSERVICE INSPECTION BOUNDARIES
NUCLEAR BOILER
ISI - M - 351


PRIMARY CONTAINMENT
UNIT 2 ONLY
FROM FEEDWATER SYSTEM
TO BOILER M-351 (F-4)
ISOLATION SIGNAL
FROM REACTOR RECIRC. PUMP SUCTION [K-2] M-351
SEE DETAIL "A" ON DWG. M-359
NOTE: SPOOL PIECE REMOVED & BY-PASS (12 DE-4") INSTALLED AT PUMP 1A UNIT #2 ONLY
SPOOL PIECE W/ TEMP. STRAINER 900 # R.F. FLANGE AT PUMP
CLEAN-UP RECIRC PUMP 1A (2AP49)
SEAL LEAKAGE CONN TO CRW
CHEM. CLEANING CONN
TYPICAL FOR THREE PUMPS EXCEPT AS NOTED
CLEAN-UP RECIRC PUMP 1B (2BP49) SAME AS PUMP 1A EXCEPT AS NOTED.
CLEAN-UP RECIRC PUMP 1C (2CP49) SAME AS PUMP 1A EXCEPT AS NOTED
CHEM. CLEANING CONN
CRW DRAIN
DIRECT TO MAIN CONDENSE: NO VALVES BEYOND THIS POINT
M-306 [M-8]
CRW VENT
150 PSIG
DRAIN TO WASTE SURGE TANK & WASTE COLLECTOR TANK
M-370 [M-8]
CRW DRAIN
FROM E/S 130
FILTER DEMIN. UNIT 6



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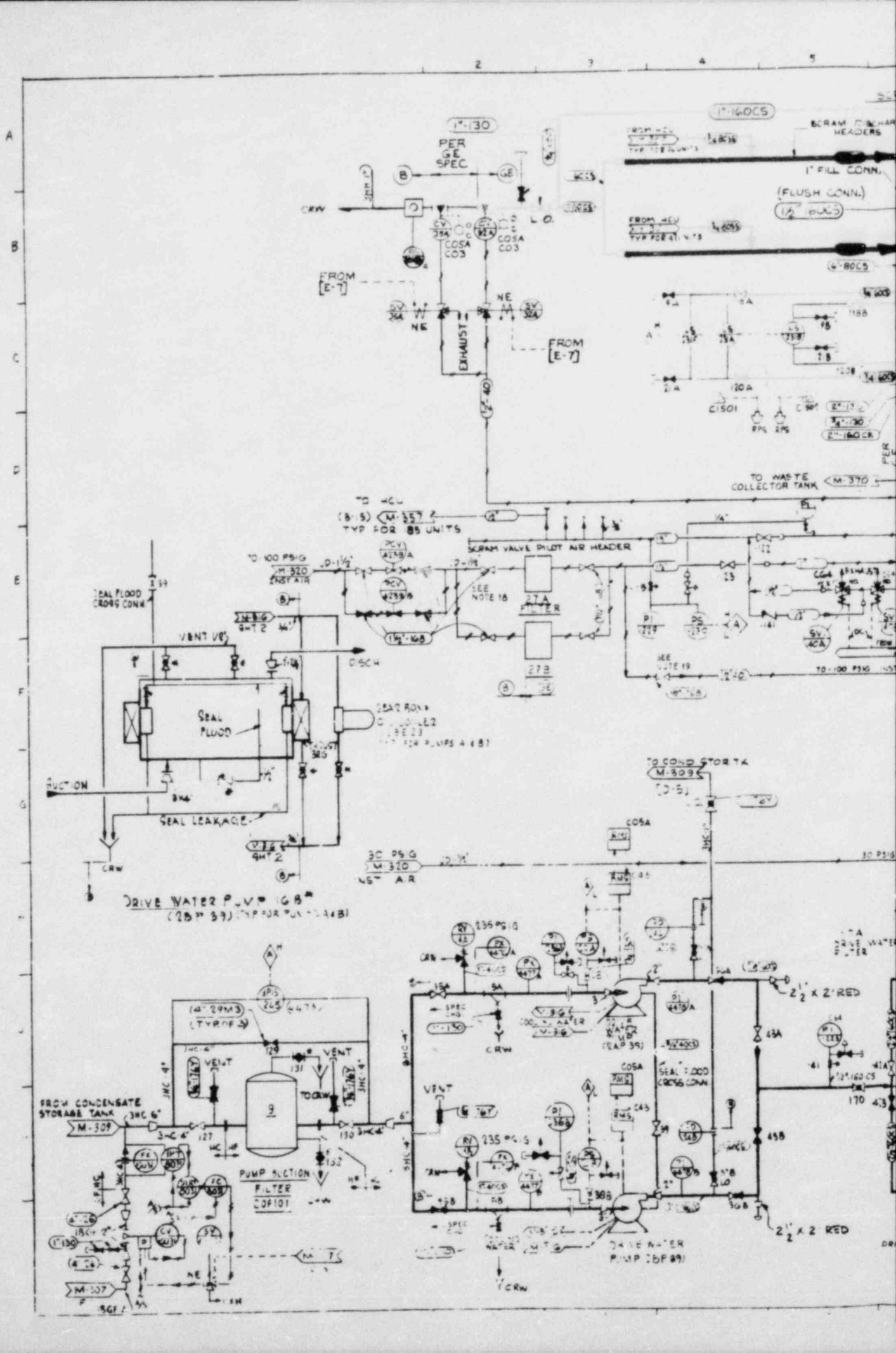
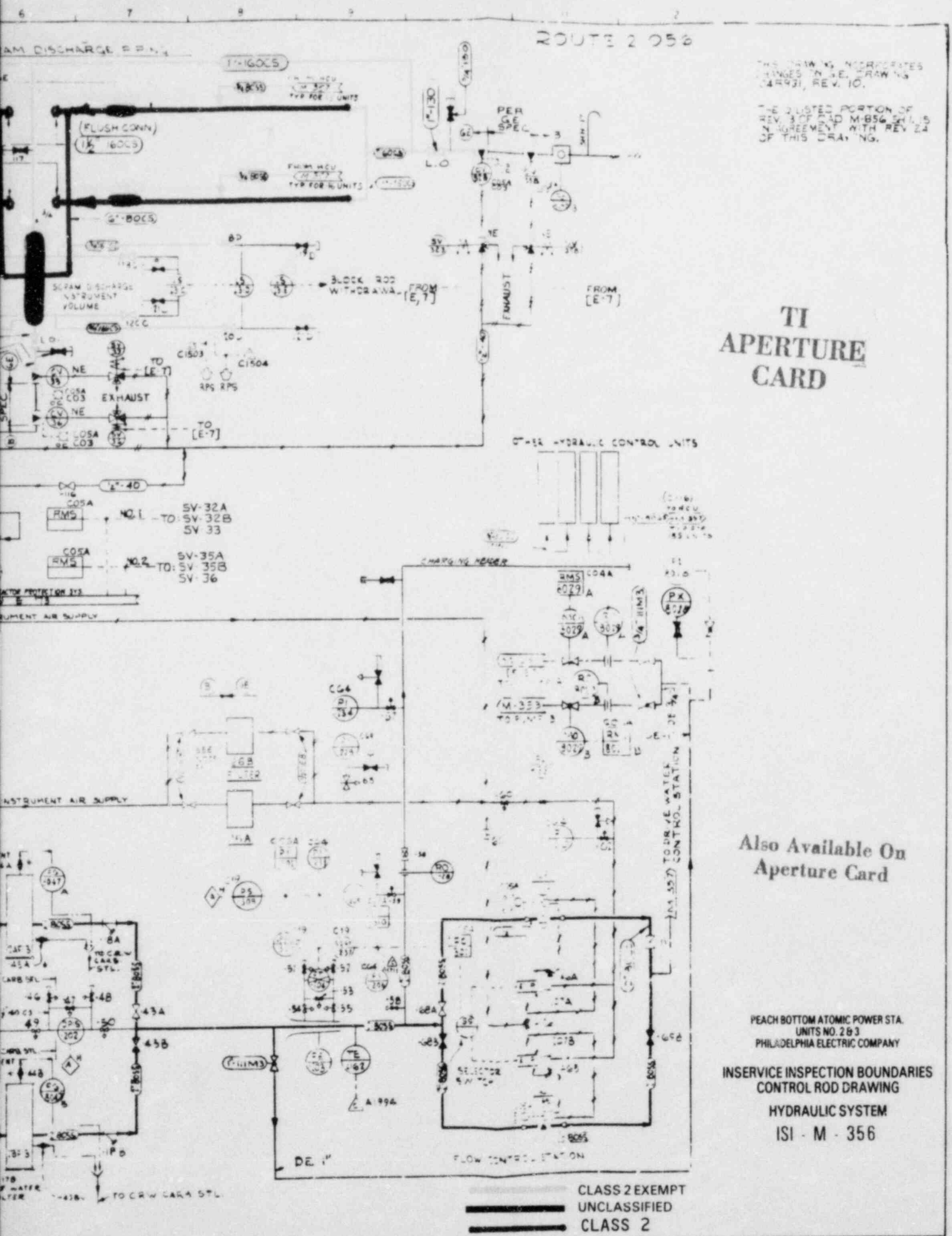
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY
INSERVICE INSPECTION BOUNDARIES
REACTOR WATER CLEAN-UP SYSTEM
ISI - M - 354

8407090097-05


1"-130
PER GE SPEC
1"-160CS
SCRAM DISCHARGE HEADERS
1" FILL CONN.
(FLUSH CONN.)
1½" 160CS
6"-80CS
FROM HCU TYP FOR 84 UNITS
FROM [E-7]
EXHAUST
NE
LO
COSA
CO3
TO WASTE COLLECTOR TANK M-370
TO HCU (B-5) M-357 TYP FOR 85 UNITS
SCRAM VALVE PILOT AIR HEADER
TO 100 PSIG M-320 INST AIR
SEE NOTE 18
27A FILTER
27B
SEAL FLOOD CROSS CONN
VENT V8
DISCH
SEAL PUMP
SUCTION
SEAL LEAKAGE
CRW
DRIVE WATER PUMP 6B
(2B & 3B) TYP FOR PUMPS 4 & 5
TO COND STOR TK M-309
30 PSIG M-320 INST AIR
235 PSIG
FROM CONDENSATE STORAGE TANK M-309
PUMP SUCTION FILTER 2DF101
SEAL FLOOD CROSS CONN
2½ X 2" RED
DRIVE WATER PUMP 2DF89
TO M-7
M-307



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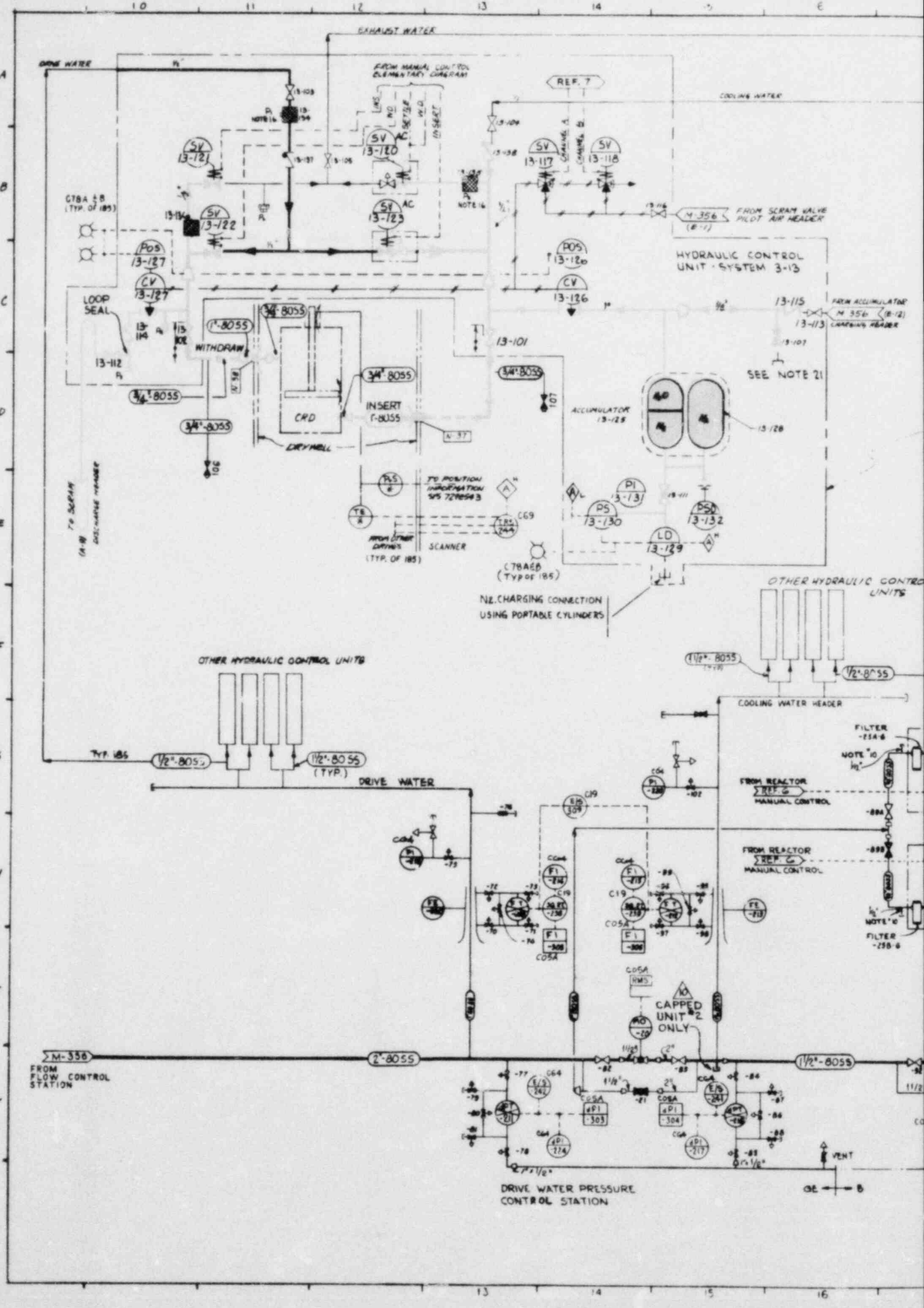
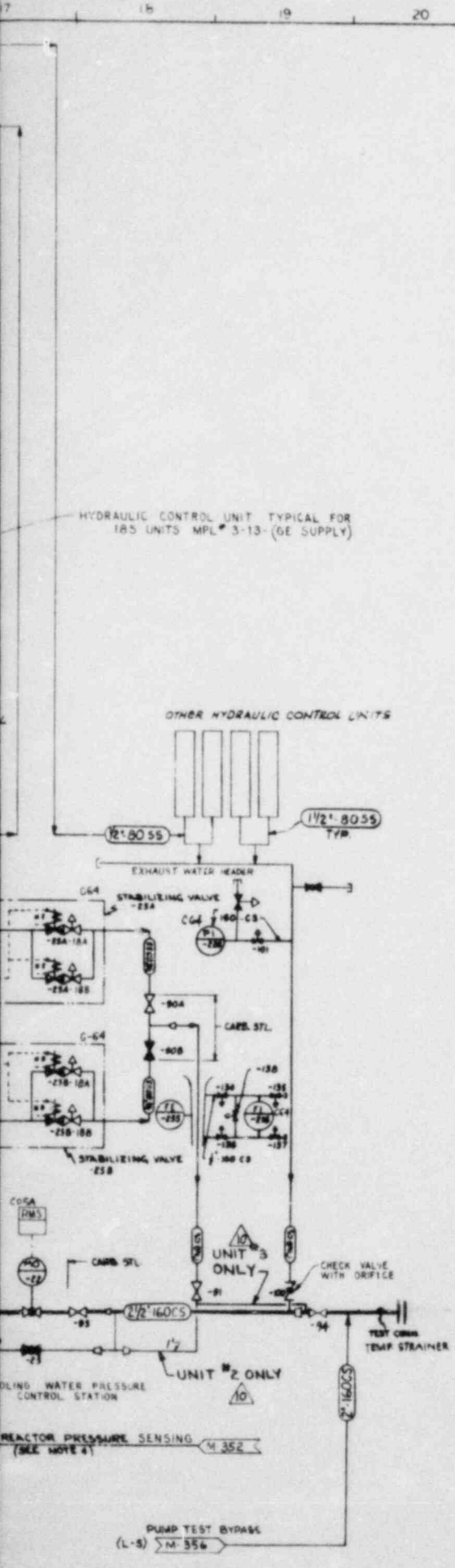
INSERVICE INSPECTION BOUNDARIES CONTROL ROD DRAWING

HYDRAULIC SYSTEM

ISI - M - 356


EXHAUST WATER
DRIVE WATER
FROM MANUAL CONTROL ELEMENTARY DIAGRAM
REF. 7
COOLING WATER
SV 13-120
SV 13-121
SV 13-122
SV 13-123
SV 13-117
SV 13-118
GTBA & B (TYP. OF 185)
POS 13-127
CV 13-127
POS 13-126
CV 13-126
FROM SCRAM VALVE PILOT AIR HEADER
HYDRAULIC CONTROL UNIT - SYSTEM 3-13
LOOP SEAL
WITHDRAW
INSERT
CRD
CRD HSG
ACCUMULATOR 13-128
FROM ACCUMULATOR CHARGING HEADER
SEE NOTE 21
TO SCRAM DISCHARGE HEADER
TO POSITION INFORMATION SYS 729E583
FROM OTHER DRIVES (TYP. OF 185)
SCANNER
PS 13-130
PI 13-131
DPSH 13-132
LD 13-129
N2 CHARGING CONNECTION USING PORTABLE CYLINDERS
OTHER HYDRAULIC CONTROL UNITS
COOLING WATER HEADER
FILTER
FROM REACTOR MANUAL CONTROL
CAPPED UNIT #2 ONLY
FROM FLOW CONTROL STATION
DRIVE WATER PRESSURE CONTROL STATION
VENT
TYP. 185
1/2"-8055
1"-8055
3/4"-8055
1 1/2"-8055
2"-8055
(TYP.)



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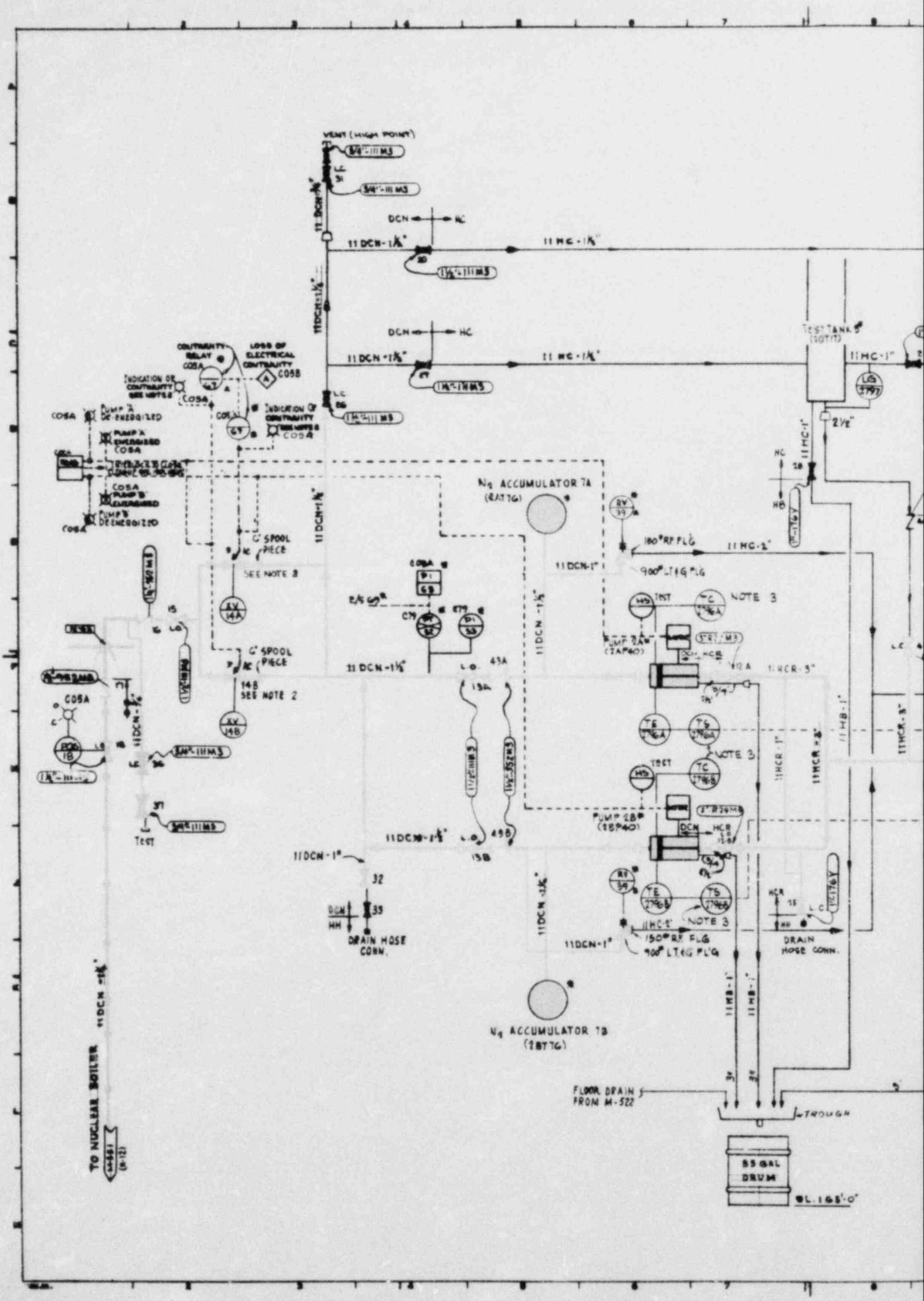
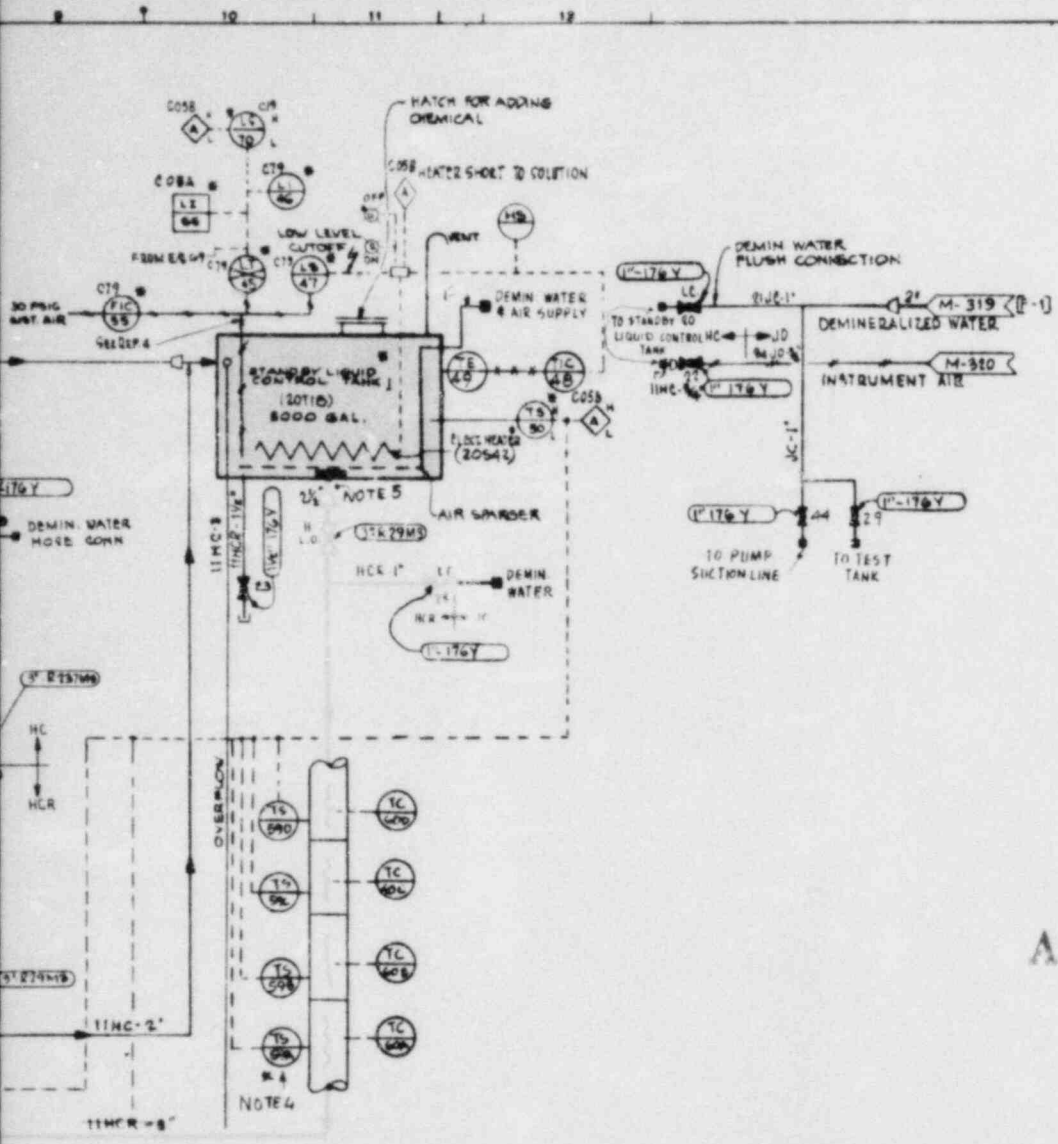
CLASS 2 EXEMPT
UNCLASSIFIED

PEACH BOTTOM ATOMIC POWER STA.
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY
INSERVICE INSPECTION BOUNDARIES
CONTROL ROD DRIVE HYDRAULIC SYSTEM
ISI - M - 357

8407090097-07


VENT (HIGH POINT)
DCN
HC
11 DCN-1½"
11 HC-1½"
CONTINUITY RELAY
LOSS OF ELECTRICAL CONTINUITY
INDICATION OF CONTINUITY
PUMP 'A' DE-ENERGIZED
PUMP 'A' ENERGIZED
PUMP 'B' ENERGIZED
PUMP 'B' DE-ENERGIZED
C SPOOL PIECE
SEE NOTE 2
SEE NOTE 3
N2 ACCUMULATOR 7A
(RATTG)
N2 ACCUMULATOR 7B
(1BTTG)
180° RF FLG
900° LT&G FLG
150° RF FLG
TEST TANK
(30T17)
11 HC-1"
11 HC-2"
11 HC-3"
11 HCR-1"
11 HCR-2"
11 HCR-3"
11 HB-1"
PUMP 2A
(2AP40)
PUMP 2B
(2BP40)
NOTE 3
TEST
DRAIN HOSE CONN.
FLOOR DRAIN FROM M-522
TROUGH
55 GAL DRUM
EL. 165'-0"
TO NUCLEAR BOILER

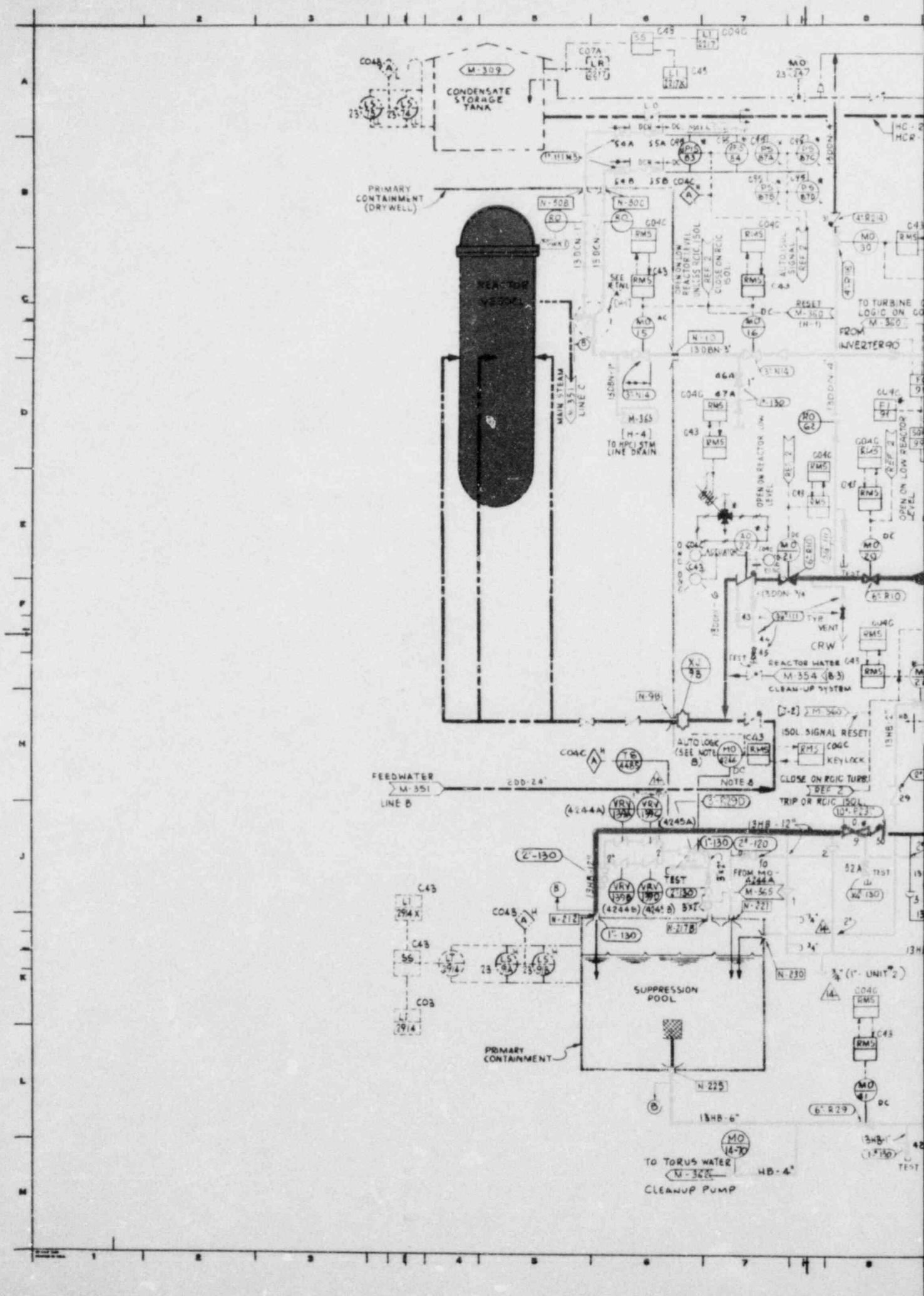


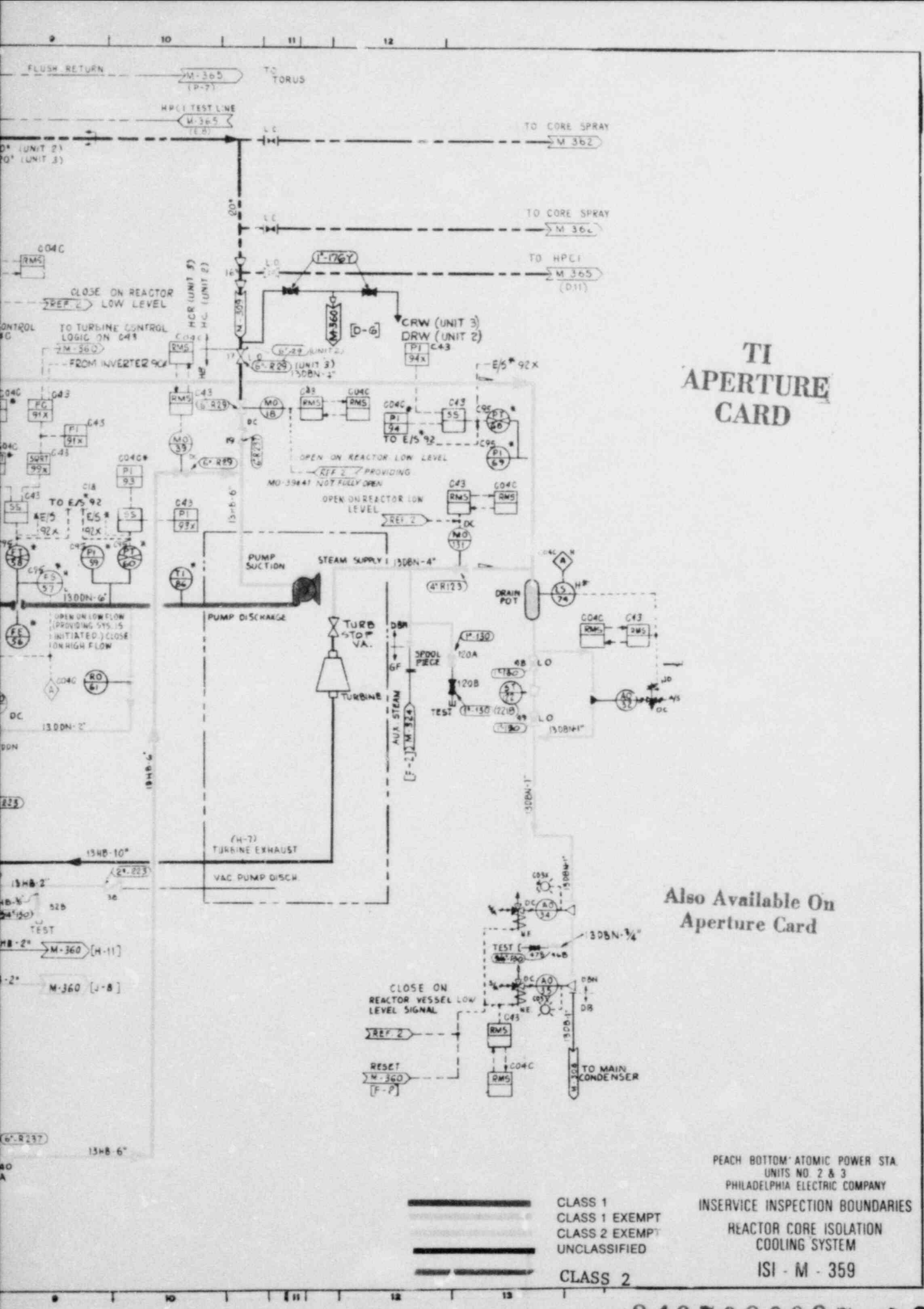
CLASS 1 EXEMPT
CLASS 2 EXEMPT
UNCLASSIFIED

PEACH BOTTOM ATOMIC POWER STA.
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY

INSERVICE INSPECTION BOUNDARIES
STANDBY LIQUID CONTROL SYSTEM

ISI - M - 358


CONDENSATE STORAGE TANK
M-309
PRIMARY CONTAINMENT (DRYWELL)
REACTOR VESSEL
MAIN STEAM
M-351 LINE C
M-365
TO HPCI STM LINE DRAIN
FEEDWATER
M-351
LINE B
SUPPRESSION POOL
PRIMARY CONTAINMENT
TO TORUS WATER
M-365
CLEANUP PUMP
REACTOR WATER CLEAN-UP SYSTEM
M-354
TO TURBINE LOGIC ON
M-360
FROM INVERTER 90
ISOL SIGNAL RESET
CLOSE ON RCIC TURB
TRIP OR RCIC ISOL
AUTO LOGIC
NOTE 8
KEYLOCK
TYP VENT
CRW
TEST
SEE RTNL
OPEN ON REACTOR LEVEL
CLOSE ON RCIC ISOL
AUTO SIGNAL
RESET
M-360
TO
FROM MO
M-365
SUPPRESSION POOL
PRIMARY CONTAINMENT
TO TORUS WATER
CLEANUP PUMP



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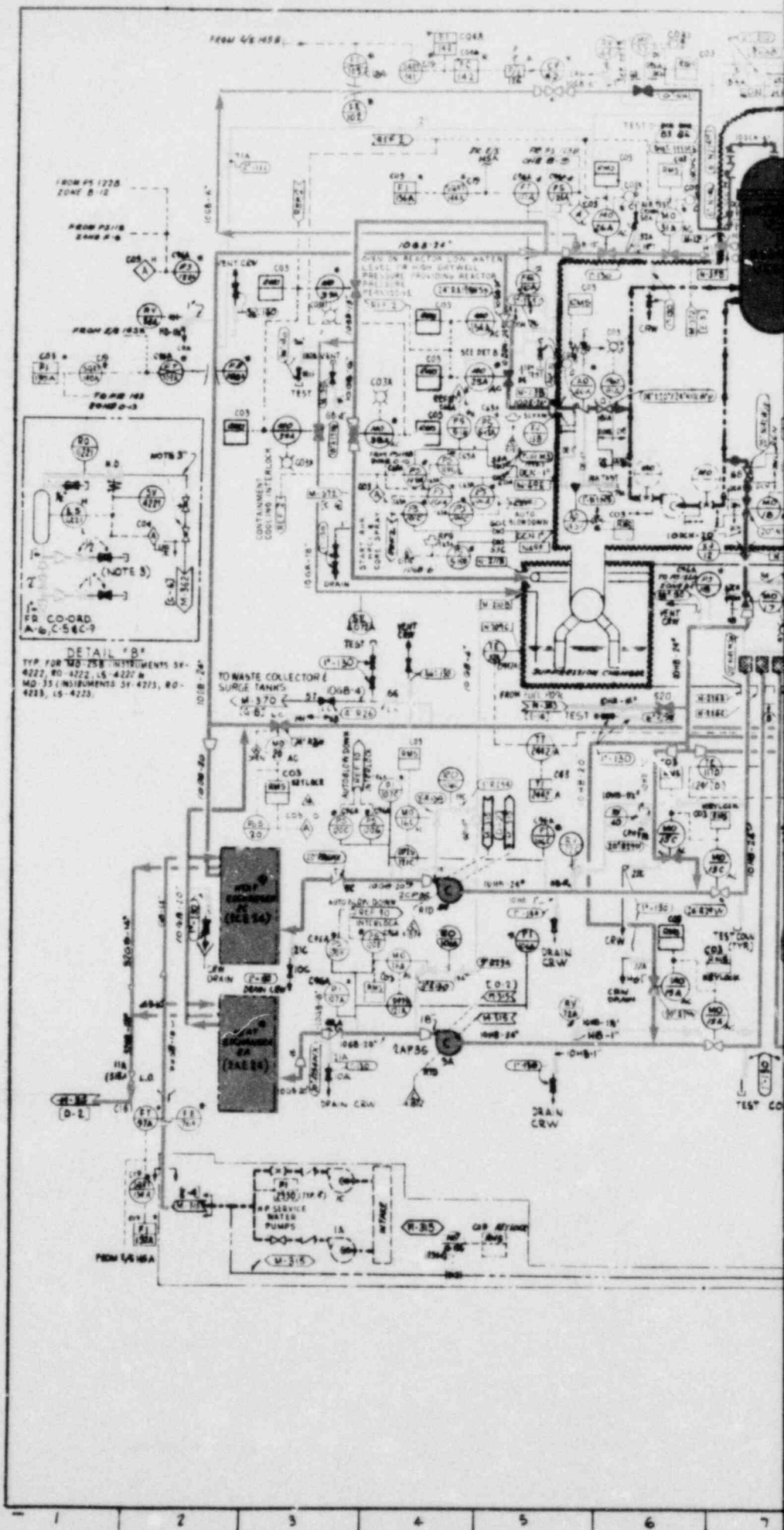
PEACH BOTTOM ATOMIC POWER STA.
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY

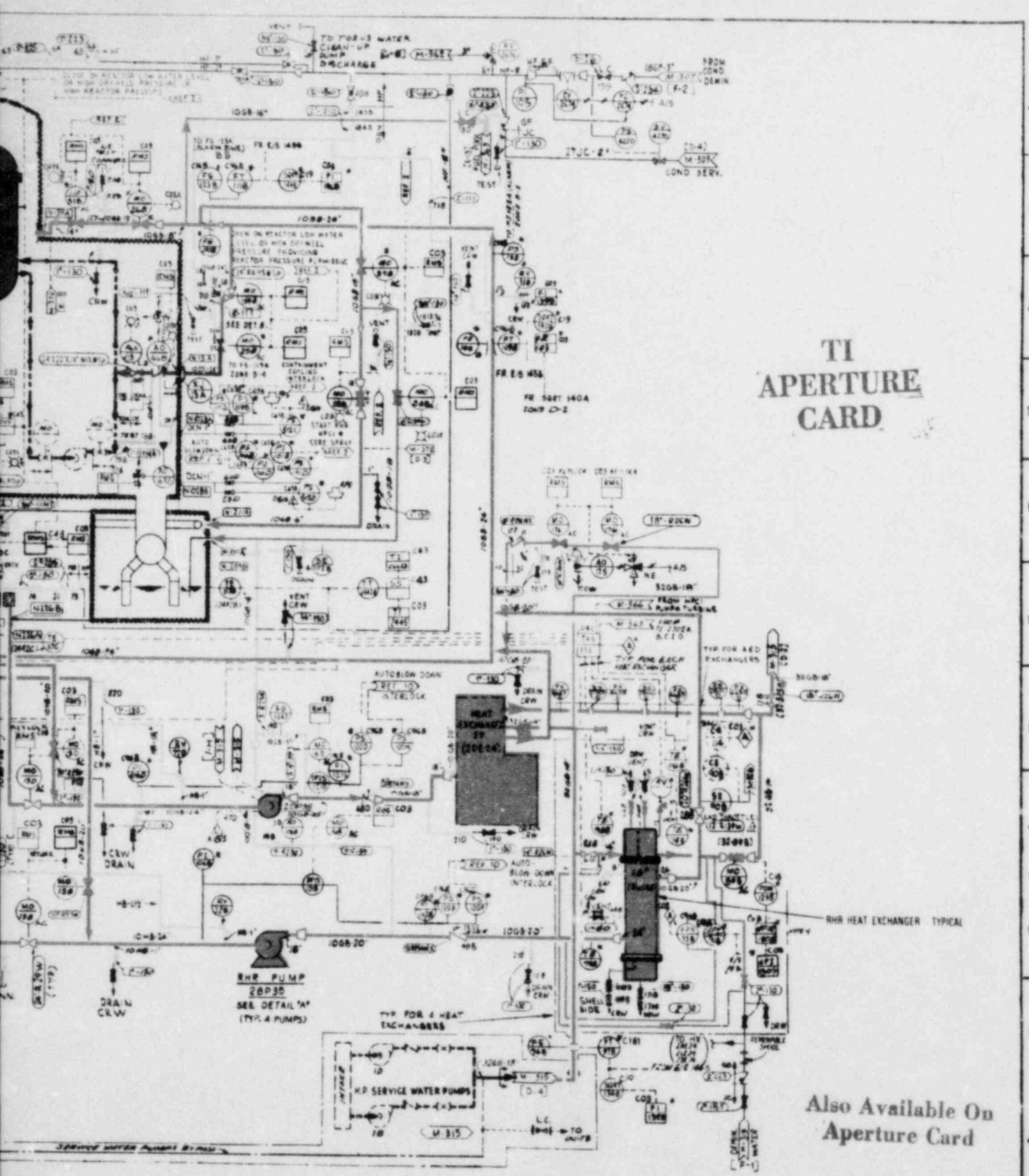
INSERVICE INSPECTION BOUNDARIES

REACTOR CORE ISOLATION COOLING SYSTEM

ISI - M - 359

8407090097-09


DETAIL "B"
TO WASTE COLLECTOR & SURGE TANKS
TEST
DRAIN CRW
1 2 3 4 5 6 7



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CLASS 1
CLASS 1 EXEMPT
CLASS 2
CLASS 2 EXEMPT
CLASS 3
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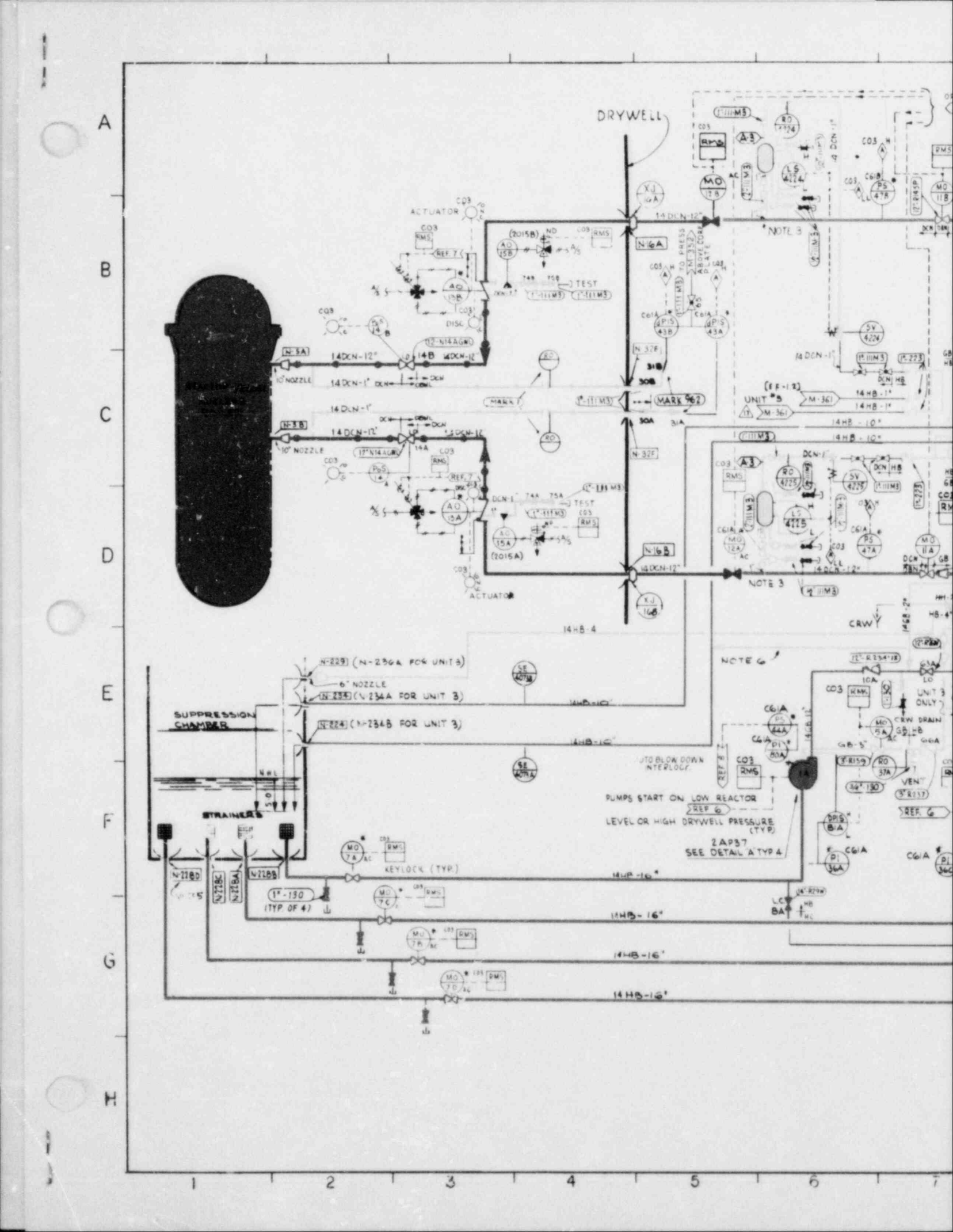
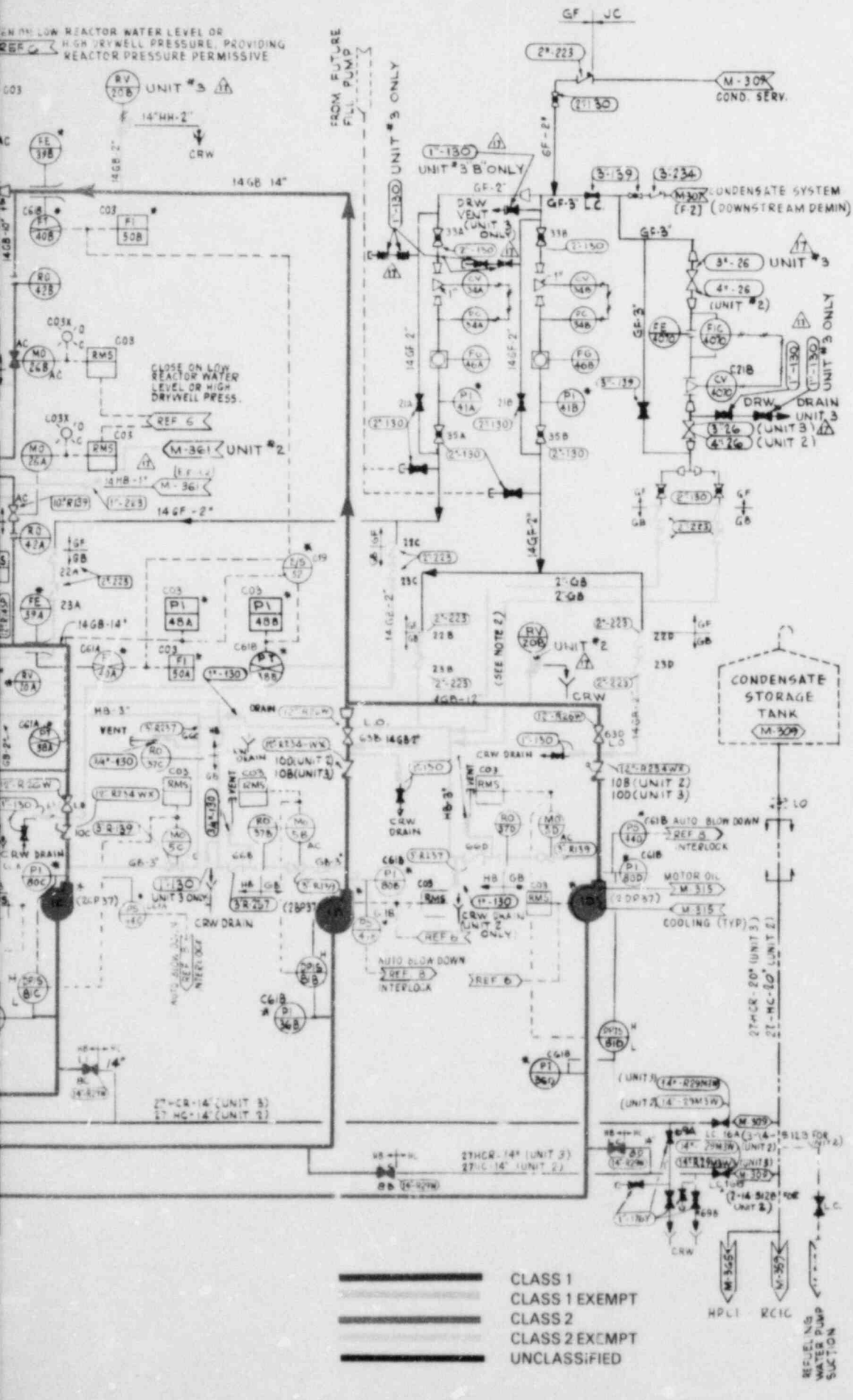
PEACH BOTTOM ATOMIC POWER STA
UNITS NO. 2&3
PHILADELPHIA ELECTRIC COMPANY
INSERVICE INSPECTION BOUNDARIES
RESIDUAL HEAT REMOVAL SYSTEM
ISI - M - 361

8407090097 -10


DRYWELL
SUPPRESSION CHAMBER
STRAINERS
NWL
ACTUATOR
NOTE 3
NOTE 6
CRW
UNIT 3 ONLY
CRW DRAIN
KEYLOCK (TYP.)
(TYP OF 4)
AUTO BLOW DOWN INTERLOCK
PUMPS START ON LOW REACTOR LEVEL OR HIGH DRYWELL PRESSURE (TYP.)
2AP37
SEE DETAIL A TYP 4
14DCN-12"
14DCN-1"
14HB-16"
14HB-10"
14HB-4
10" NOZZLE
6" NOZZLE
TEST
DISC.
TO PRESS SUPP CHAM
ABOVE CORE PLATE
UNIT #3
(EF-12)
MARK I
MARK II
(N-229) (N-236A FOR UNIT 3)
(N-234) (N-234A FOR UNIT 3)
(N-224) (N-234B FOR UNIT 3)
N-228D
N-228C
N-228A
N-228B
1"-130
N-16A
N-16B
N-32F
N-5A
N-5B
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7



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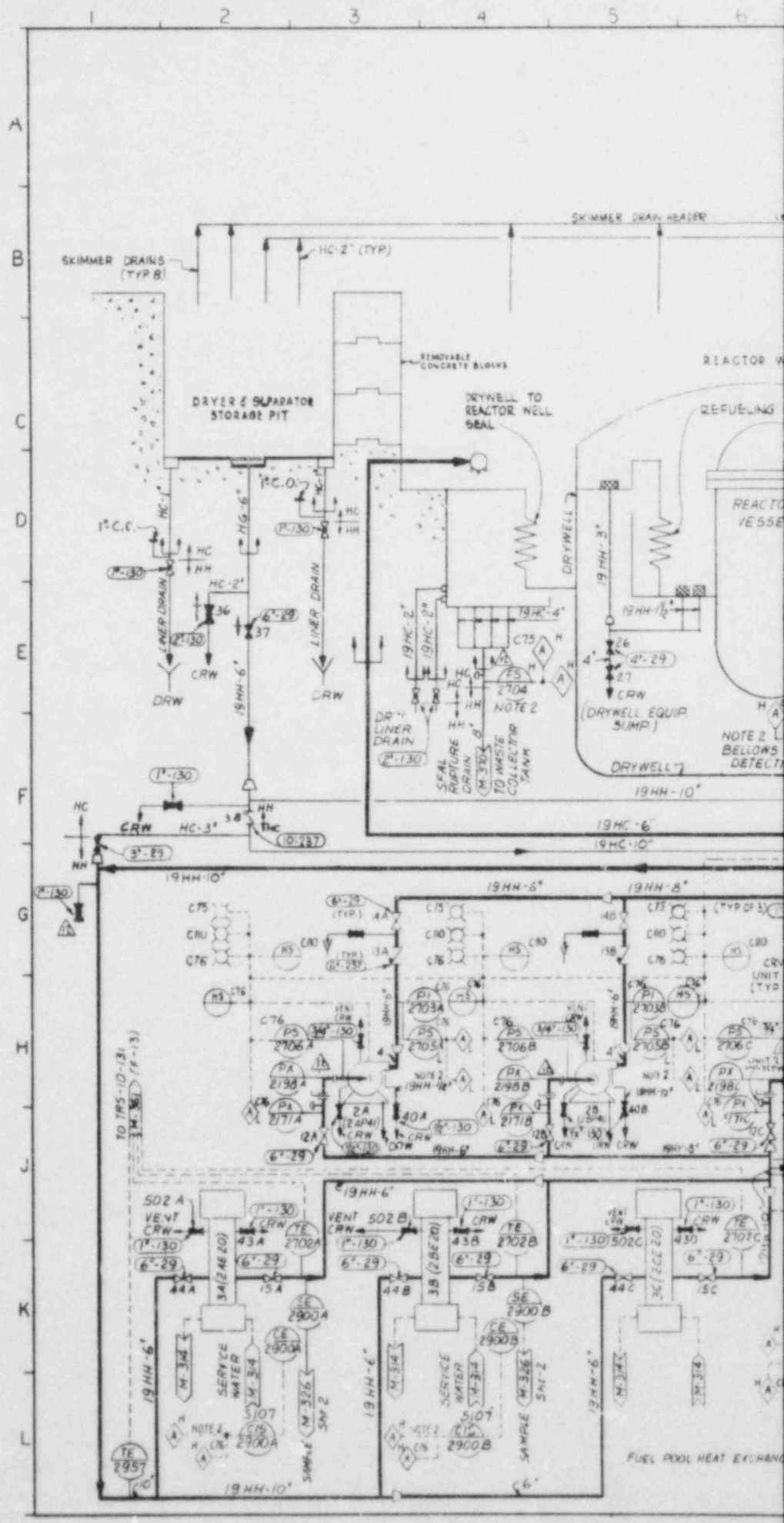
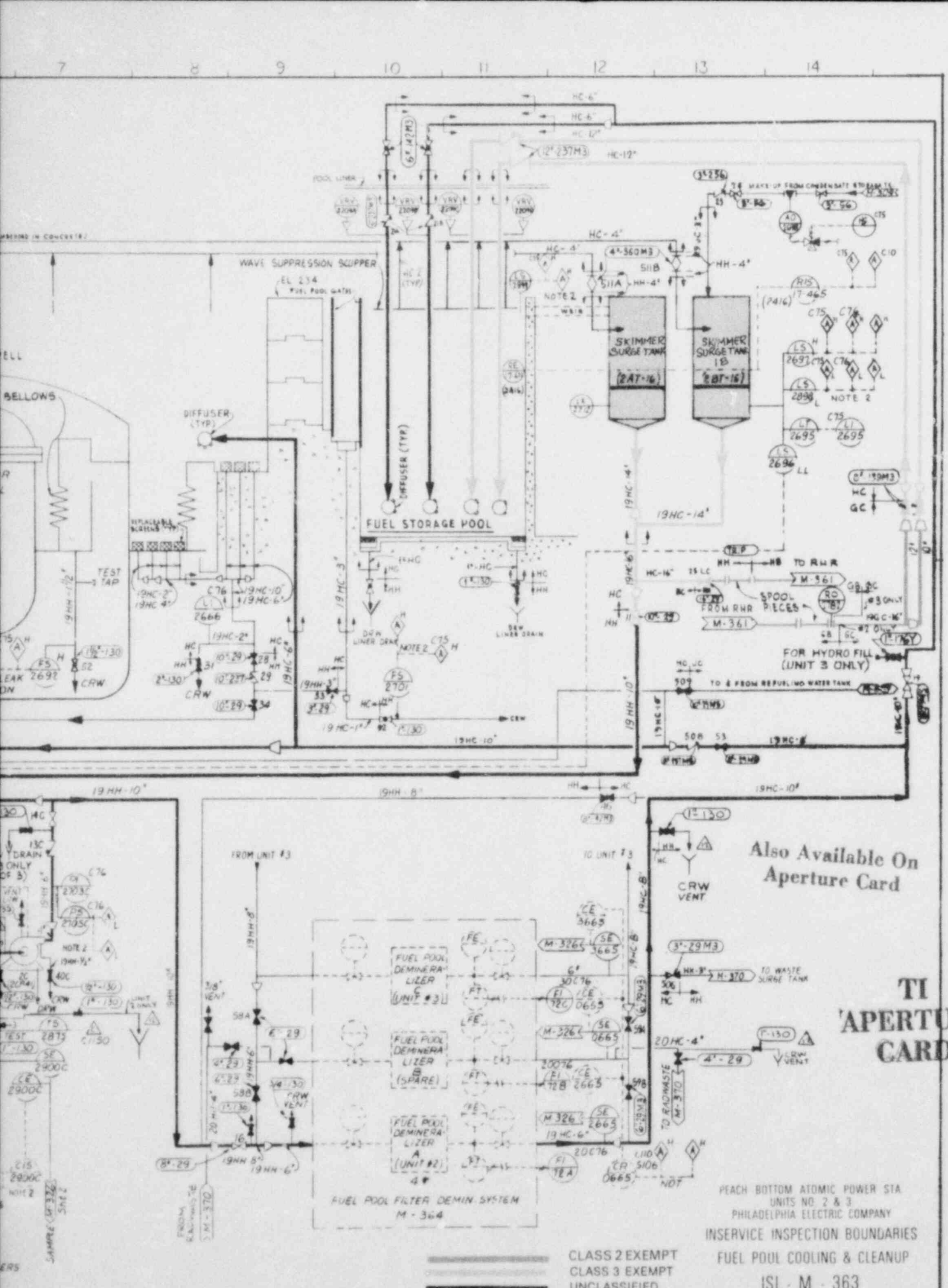
Also Available On Aperture Card

PEACH BOTTOM ATOMIC POWER STA.
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY

INSERVICE INSPECTION BOUNDARIES
CORE SPRAY COOLING SYSTEM
ISI - M - 362

8407090097 -11


SKIMMER DRAIN HEADER
SKIMMER DRAINS (TYP 8)
HC-2" (TYP)
REMOVABLE CONCRETE BLOCKS
DRYER & SEPARATOR STORAGE PIT
DRYWELL TO REACTOR WELL SEAL
REFUELING
REACTOR VESSEL
DRYWELL
LINER DRAIN
DRW
CRW
19HH-6"
19HC-2"
19HC-4"
19HH-3"
19HH-1½"
(DRYWELL EQUIP SUMP)
DR-1 LINER DRAIN
SEAL RUPTURE DRAIN
TO WASTE COLLECTOR SAM
NOTE 2
NOTE 2 BELLOWS DETECTI
19HH-10"
19HC-6"
19HC-10"
19HH-8"
19HH-12"
19HH-2"
TO TRS-10-131
FUEL POOL HEAT EXCHANG
SERVICE WATER
SAMPLE
SAT 2
VENT CRW
502 A
502B
502C
1 2 3 4 5 6
A B C D E F G H J K L



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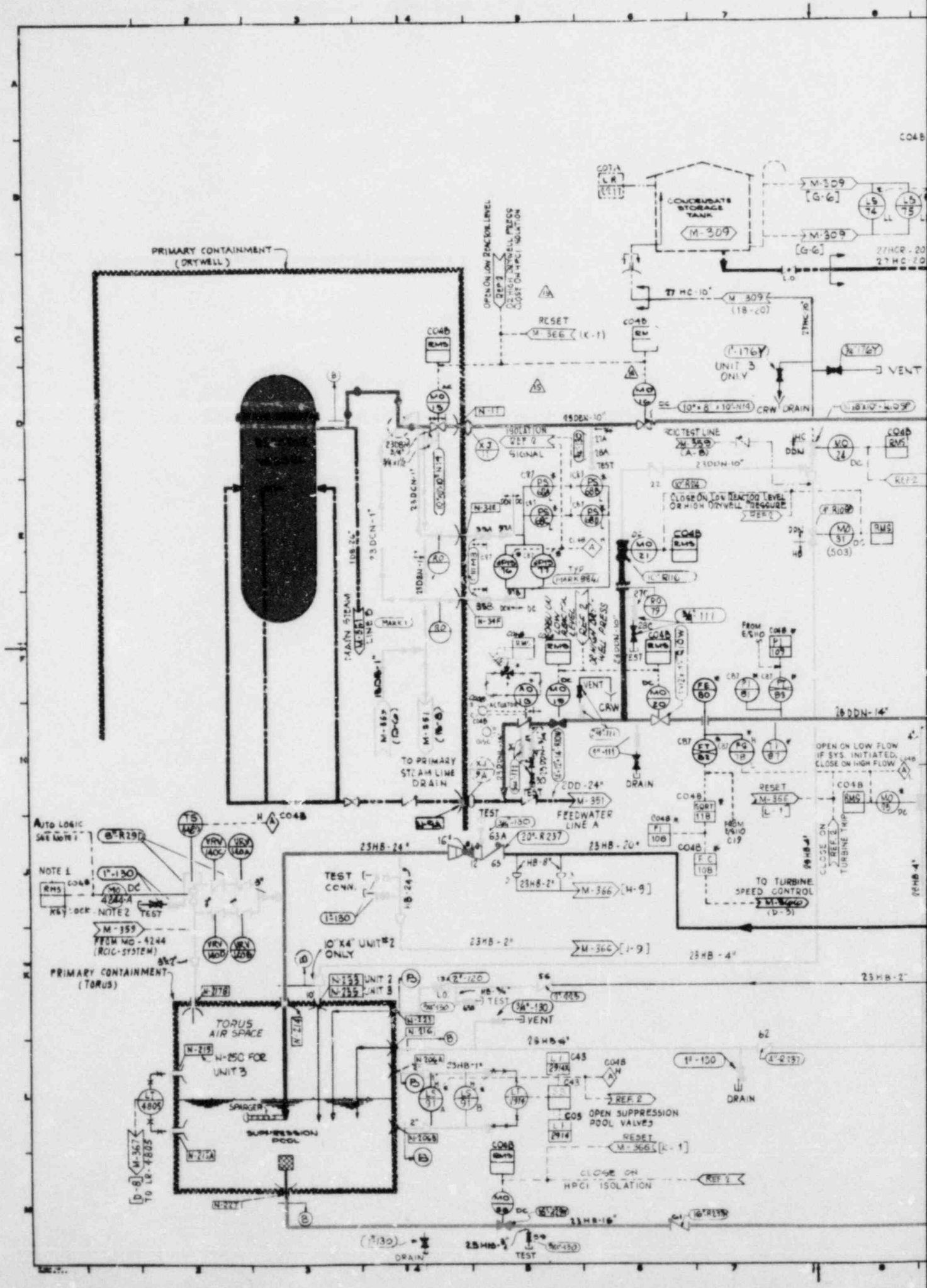
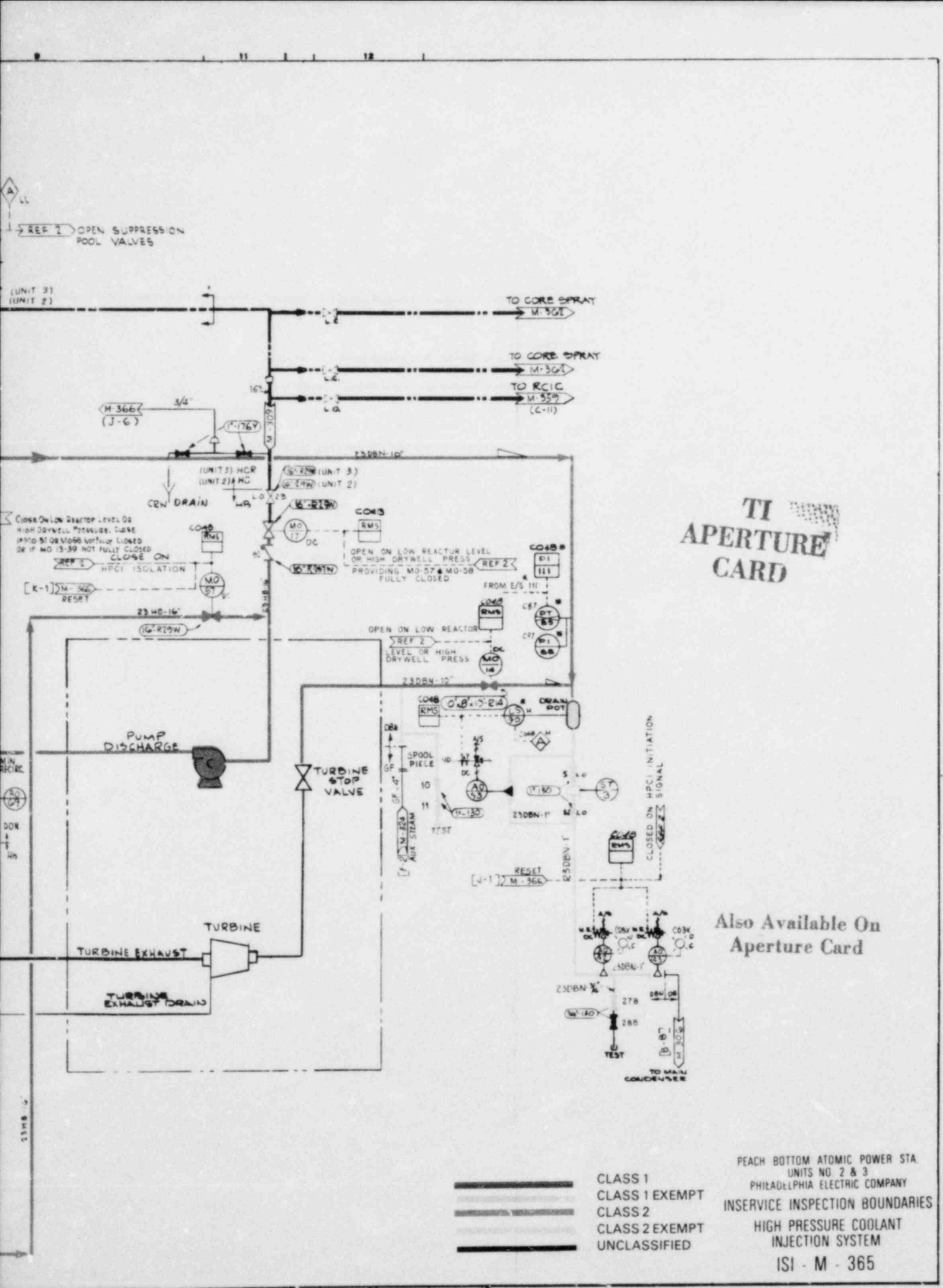
TI APERTURE CARD

PEACH BOTTOM ATOMIC POWER STA
UNITS NO. 2 & 3
PHILADELPHIA ELECTRIC COMPANY

INSERVICE INSPECTION BOUNDARIES
FUEL POOL COOLING & CLEANUP
ISI - M - 363

8407090097-12


PRIMARY CONTAINMENT (DRYWELL)
CONDENSATE STORAGE TANK M-309
M-309 [G-6]
M-309 [G-6]
RESET M-366 (K-1)
UNIT 3 ONLY
VENT
DRAIN
ISOLATION SIGNAL
RCIC TEST LINE
CLOSE ON LOW TORUS LEVEL OR HIGH DRYWELL PRESSURE
MAIN STEAM LINE D
MARK I
TO PRIMARY STEAM LINE DRAIN
FEEDWATER LINE A
TEST CONN.
FROM RCIC SYSTEM
OPEN ON LOW FLOW IF SYS. INITIATED; CLOSE ON HIGH FLOW
TO TURBINE SPEED CONTROL
AUTO LOGIC SEE NOTE 1
NOTE 1
NOTE 2
FROM MO-4244 (RCIC SYSTEM)
10"X4" UNIT #2 ONLY
PRIMARY CONTAINMENT (TORUS)
TORUS AIR SPACE
N-250 FOR UNIT 3
SPARGER
SUPPRESSION POOL
OPEN SUPPRESSION POOL VALVES
CLOSE ON HPCI ISOLATION
TO LR-4805
TO LR-4806
REF. 1
REF. 2



6. INSERVICE TESTING OF PUMPS

6.1 GENERAL

The inservice testing program for Class 1, Class 2, and Class 3 pumps has been developed in accordance with requirements of Subsection IWP of the 1980 Edition of Section XI with Addenda through Winter 1981. Details of the inservice testing program for pumps with requests for relief from Section XI requirements are identified in this section.

6.2 INSERVICE TESTING PROGRAM FOR CLASS 1, CLASS 2, and CLASS 3 PUMPS

The inservice testing program for Class 1, Class 2, and Class 3 pumps is detailed in Table 6.2-1. Table 6.2-1 identifies the pumps to be tested, pump equivalent ASME Code class, parameters to be measured based on plant design, and test frequency.

Inservice testing of pumps is performed at the test frequency specified in Table 6.2-1. Consistent with the treatment of surveillance tests in the Technical Specifications, these testing intervals may be adjusted plus or minus 25 percent. In cases where the elapsed interval has exceeded 100 percent of the specified interval, the next test interval shall commence at the end of the original specified interval.

6.3 REQUESTS FOR RELIEF FROM SECTION XI REQUIREMENTS

6.3.1 REQUEST FOR RELIEF

6.3.1.1 Components

Emergency cooling water pump and emergency service water booster pumps.

6.3.1.2 Requirement from Which Relief Requested

The inservice test quantities shall be measured nominally every three months during normal plant operation in accordance with Subarticles IWP-3300 and IWP-3400.

6.3.1.3 Justification

The emergency cooling water pump and the emergency service water booster pumps are associated with operation of the emergency cooling tower. The emergency cooling tower is an emergency heat sink, common to both units, and is only used in the event of loss of the normal heat sink (Conowingo Pond) due to catastrophic failure of the Conowingo Dam or a flood of the Conowingo Pond. Flooding of the Conowingo Pond has an estimated occurrence of once per 1000 years. During normal operation, cooling water for safety-related heat exchangers is supplied by the service water system (not a safety-related system). During loss of offsite power, cooling water to safety-related heat exchangers is supplied by the

TABLE 6.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 PUMPS

Pump	Pump I.D. No.	P&ID	Equivalent ASME Code Class	Frequency of Measurement of Test Parameters							Frequency of Operability Check	Relief Request
				N	Pi	P	Qi	Tb	V	L/P		
RHR (4)	2/3(A,B,C,D)P35	M-361	2	NR	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3,7,8
HPCI (1)	2/3/0P(33,38)	M-366	2	Q	Q	Q	Q	Y	Q	Q	Q	(6.3)3
RCIC (1)	2/3/0P36	M-360	2	Q	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3
Core spray (4)	2/3(A,B,C,D)P37	M-362	2	NR	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3
Standby liquid control (2)	2/3(A,B,)P40	M-358	2	NR	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3,4,8
Emergency service water (2)	0(A,B)P57	M-315	3	NR	Q	Q	NA	NA	Q	Q	Q	(6.3)2,3,5,6
High-pressure Service water (4) (RHR service water)	2/3(A,B,C,D)P42	M-315	3	NR	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3,5,7,8
Emergency cooling water (1)	00P186	M-330	3	NR	A	A	NA	NA	A	A	A+	(6.3)1,2,3,5,6,8
Emergency service water booster (2)	0(A,B)P163	M-330	3	NR	A	A	NA	NA	A	A	A+	(6.3)1,2,3,6,8
Diesel Oil Transfer (4)	0(A,B,C,D)P60	M-323	3	NR	Q	Q	Q	NA	Q	Q	Q	(6.3)2,3

+These pumps are common to both units and are tested once per operating cycle for each unit. The resultant test frequency is approximately once per 9 months.

KEY:
- N = Rotative speed
- Pi = Inlet pressure
- P = Differential pressure
- Qi = Flow rate
- Tb = Bearing temperature
- V = Vibration
- L/P = Lubricant level or pressure to be observed
- NA = Not available
- NR = Not required
- M = Monthly
- Q = Quarterly
- A = Once per operating cycle
- Y = Yearly

emergency service water pumps. Testing of the emergency cooling water pump and the emergency service water booster pumps requires manually isolating the emergency service water system from the service water system and operating several manual valves to establish a proper flow path to and from the emergency cooling tower. These operations can result in the temporary loss of cooling to safety-related heat exchangers, and thereby jeopardize safety-related equipment and reactor operations and safety. Additionally, these pumps, due to their back-up function for a very unlikely event, are operated only during surveillance testing, once per cycle, in accordance with plant Technical Specifications, and therefore pump hydraulic or mechanical changes will not be significant between tests.

6.3.1.4 Testing in Lieu of Section XI Requirements

These pumps are tested for operability in accordance with plant Technical Specifications at least once each operating cycle for each unit. Inservice test quantities are measured during these tests. Since the emrgency cooling water pump and emergency service water booster pumps are common to both units, these pumps are tested approximately every 9 months.

6.3.2 REQUEST FOR RELIEF

6.3.2.1 Components

RHR pumps, RCIC pump, core spray pumps, standby liquid control pumps, emergency service water pumps, high-pressure service water pumps, emergency cooling water pump, emergency service water booster pumps, and diesel oil transfer pumps.

6.3.2.2 Requirement from Which Relief Requested

Bearing temperatures on these pumps shall be measured in accordance with Subarticle IWP-4300.

6.3.2.3 Justification

Of the pumps in question, several are centrifugal pumps and have no bearings outside the main flow path and measurement is not required. All the pumps in question either have bearings in main flow for lubrication or have anti-friction bearings lubricated by static oil baths. Measurement of the bulk temperature of an oil bath is not indicative of bearing condition. Temperature measurements of the bearings themselves are not meaningful. Our discussions with bearing manufacturers, pump builders, and maintenance people confirmed that the temperature rise of an anti-friction bearing prior to failure occurs over a period of seconds or minutes. Measuring the temperature of anti-friction bearings cannot be justified since gradual temperature change is not an early warning measurement.

6.3.2.4 Testing in Lieu of the Section XI Requirements

Proper operation is verified by the other inservice test quantities which are measured. Condition of the pump bearings is determined by visual inspection when the pump is sufficiently disassembled during maintenance.

6.3.3 REQUEST FOR RELIEF

6.3.3.1 Components

All pumps.

6.3.3.2 Requirement from Which Relief is Requested

Requirements of Article IWP-6000 to provide records and plans for inservice testing of pumps.

6.3.3.3 Justification

Existing plant surveillance test procedures document most of the test conditions and parameters identified in the Subsection IWP.

6.3.3.4 Alternate to Section XI Requirements

Surveillance tests were reviewed and revised to incorporate the necessary documentation to meet Section XI requirements for pump testing. Surveillance tests results are retained at the plant site and are available for audit by the enforcement authority.

6.3.4 REQUEST FOR RELIEF

6.3.4.1 Components

Standby liquid control pumps.

6.3.4.2 Requirement from Which Relief Requested

Pressure measurement to be in accordance with requirements of Subarticle IWP-4200.

6.3.4.3 Justification

Plant design does not incorporate direct pump inlet pressure indication.

6.3.4.4 Alternate in Lieu of Section XI Requirements

Liquid level in the standby liquid control tank is monitored during quarterly inservice testing. Pump suction pressure is assumed to be the difference in elevation between the pump suction line connection and the tank liquid elevation.

6.3.5 REQUEST FOR RELIEF

6.3.5.1 Components

Emergency service water pumps, high-pressure service water pumps, and emergency cooling water pump.

6.3.5.2 Requirement from Which Relief Requested

Pressure measurements to be in accordance with requirements of Subarticle IWP-4200.

6.3.5.3 Justification

Plant design does not incorporate direct pump inlet pressure indication. These pumps are of a vertical design with each pump suction casing submerged in a wet pit.

6.3.5.4 Alternate in Lieu of Section XI Requirements

The water level in each wet pit is monitored during inservice testing of the respective pump. Pump inlet pressure is calculated by utilizing available station instrumentation to determine the appropriate wet pit level and calculating the available suction head at the pump inlet.

6.3.6 REQUEST FOR RELIEF

6.3.6.1 Components

Emergency service water pumps, emergency service water booster pumps, and emergency cooling water pump.

6.3.6.2 Requirement from Which Relief Requested

Inservice test quantities shall include flow rate measurement in accordance with Subarticle IWP-4600.

6.3.6.3 Justification

Plant design does not include flow rate measurement instrumentation for these pumps.

6.3.6.4 Testing in Lieu of Section XI Requirements

Pumps will be inservice tested at pump shutoff head conditions in accordance with plant Technical Specifications.

6.3.7 REQUEST FOR RELIEF

6.3.7.1 Components

RHR pumps and high-pressure service water pumps.

6.3.7.2 Requirement from Which Relief Requested

Pump parameters to be compared with reference values in accordance with Subarticle IWP-3200.

6.3.7.3 Justification

Reference values are defined in the Code as one or more fixed sets of values as measured or observed when the equipment is known to be operating acceptably. The flow resistance of the RHRS and high-pressure service water system changes due to fouling of the system, and variations in the mode of operaton to satisfy plant conditions. It is, therefore, technically impossible to assign a fixed reference value to the parameters of pump flow and differential pressure, since these values are inversely proportional to each other.

6.3.7.4 Testing in Lieu of Section XI Requirements

Pump flow and differential pressures are compared with a reference head capacity curve as an alternative method of performing the evaluation.

6.3.8 REQUEST FOR RELIEF

6.3.8.1 Components

RHR pumps, standby liquid control pumps, high-pressure service water pumps, emergency cooling water pump, and emergency service water booster pumps.

6.3.8.2 Requirement from Which Relief Requested

Measure and evaluate pump differential pressures in accordance with Subarticle IWP-4200.

6.3.8.3 Justification

The suction pressure is a function of river level, torus level, tank level, or upstream system pressure for these pumps. Procedural controls are utilized to maintain a constant test suction pressure, or the level variations have an insignificant affect on differential pressure. It is therefore possible to accurately monitor pump performance trends by measuring only the discharge pressure.

6.3.8.4 Testing in Lieu of Section XI Requirements

The RHR, standby liquid control, high-pressure service water, emergency cooling water, and emergency service water booster pump discharge pressures are measured and evaluated in lieu of their differential pressures when the variation in suction pressure is less than one percent of the pumps differential pressure.

7. INSERVICE TESTING OF VALVES

7.1 General

The inservice testing program for Class 1, Class 2 and Class 3 valves has been developed in accordance with the requirements of Subsection IWV of the 1980 Edition of Section XI with Addenda through Winter 1981. Details of the inservice testing program for valves with requests for relief from Section XI requirements are identified in the section.

7.2 INSERVICE TESTING PROGRAM FOR CLASS 1, CLASS 2, AND CLASS 3 VALVES

The inservice testing program for Class 1, Class 2, and Class 3 valves is detailed in Table 7.2-1. Table 7.2-1 identifies the valves to be tested, ASME Section XI category, test frequency, and type of test.

Categories of valves subject to the rules of this subsection are defined as:

1. Category A - valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function.

2. Category B - valves for which seat leakage in the closed position is inconsequential for fulfillment of their function.

3. Category C - valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves).

4. Category D - valves which are actuated by an energy source capable of only one operation, such as rupture discs or explosive-actuated valves.

Inservice tests on valves will be performed with the test frequencies specified in Table 7.2-1. Consistent with the treatment of surveillance tests in the Technical Specifications, these test frequencies may be adjusted plus or minus 25 percent. In cases where the elapsed interval has exceeded 100 percent of the specified interval, the next test interval shall commence at the end of the original specified interval.

Valve exercising tests may be cancelled at the discretion of the Shift Superintendent or his alternate when in his judgement the test could place the plant in an unsafe condition. Examples of this situation include certain valves inside containment where a test failure could negate the safety function of a system, and situations where a component is inoperable and testing of the redundant component may cause an undesirable transient.

Table 7.2-1 specifies the type of leak rate test required for the Category A valves. The leak rate test will meet the criteria of 10CFR50, Appendix J, Type C leak rate testing (J) or meet the criteria for pressure isolation (PI). Pressure isolation criteria may be met by leak rate testing an alternate check valve or remotely operated valve in series with the pressure isolation valve, as designated in Table 7.2-1.

7.3 REQUESTS FOR RELIEF FROM SECTION XI REQUIREMENTS

7.3.1 REQUEST FOR RELIEF

7.3.1.1 Components

Category A valves identified in Table 7.2-1.

7.3.1.2 Requirement from Which Relief Requested

Valve leak rate testing shall be performed in accordance with Subsubarticle IWV-3420 of Section XI.

7.3.1.3 Justification

Leak rate testing is already being conducted on Category A valves that perform a containment isolation function in accordance with the plant Technical Specifications, which conform as far as practicable to the Criteria of Appendix J to 10CFR50. The NRC has reviewed and approved the existing containment isolation valve leak rate testing program. Category A valves performing a pressure isolation function will meet Section XI requirements, except for those valves requiring specific relief as noted in Table 7.2-1.

7.3.1.4 Testing in Lieu of Section XI Requirements

Leak rate testing is performed and documented in accordance with the plant Technical Specification on Category A valves that perform a containment isolation function. Category A valves performing a pressure isolation function are leak tested in accordance with Section XI, or in accordance with the instructions of the NRC letter on pressure isolation valves dated February 23, 1980, except for those valves requiring specific relief as noted in Table 7.2-1.

7.3.2 REQUEST FOR RELIEF

7.3.2.1 Components

All valves identified in Table 7.2-1 of the Inservice Testing Program for Class 1, Class 2, and Class 3 valves.

7.3.2.2 Requirement from Which Relief Requested

Corrective action for inoperable valves require the condition be corrected before unit startup from a cold shutdown condition in accordance with Paragraphs IWV-3417 and IWV-3523.

7.3.2.3 Justification

Constraints on unit startup with an inoperable valve depend on many factors specific to individual plant design. Limiting conditions for operation have been analyzed and are identified within the plant Technical Specifications.

7.3.2.4 Alternate to Section XI Requirements

Inoperable valves will be evaluated within the constraints of the plant Technical Specifications to determine when an inoperable valve will prevent plant startup from a cold shutdown condition. The evaluation shall specify when inoperable valves may be repaired in accordance with plant conditions.

7.3.3 REQUEST FOR RELIEF

7.3.3.1 Components

Feedwater check valves VV-6-28 (A, B) and VV-6-96 (A, B).

7.3.3.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months as provided by IWV-3522.

7.3.3.3 Justification

There is no practical way to test these normally open valves during reactor operation or cold shutdown in accordance with Paragraph IWV-3522. Valves VV-6-28 (A, B), and VV-6-96 (A, B) are normally open during power operation; and open status is verified by proper feedwater flow. Their safety function is to close for containment isolation during an accident. Since there is no external operator for the valve, the valves can be closed only by a stoppage of feedwater flow which is impractical during power operation. Since the valves are of welded construction, and the valve disk pins are totally enclosed, there is no practical way of observing the disk motion to verify proper valve operation during exercising. Therefore, the exercising during cold shutdown is of no value. The positive closure and the leak tightness of the valves are verified by Appendix J testing once per operating cycle. Such testing will ensure the safety function of the valves to the extent practical.

7.3.3.4 Testing in Lieu of Section XI Requirements

These valves will be Appendix J leak tested once per operating cycle in accordance with the plant Technical Specifications.

7.3.4 REQUEST FOR RELIEF

7.3.4.1 Components

Reactor water cleanup return check valve VV-12-62.

7.3.4.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months as provided by IWV-3522.

7.3.4.3 Justification

There is no practical way to test this normally open check valve during reactor operation or cold shutdown. Neighboring valves VV-6-28B (feedwater check) and MO-12-68 (reactor water cleanup return) are leak tested in accordance with the Technical Specifications to ensure isolation capabilities for this penetration. VV-12-62 is not designated as a containment isolation valve (CIV). Instead, MO-12-68 in the same line is designated as a CIV and is Appendix J tested and exercised quarterly as required by the Code. Such testing will adequately ensure the safety function of the associated containment penetration.

7.3.4.4 Testing in Lieu of Section XI Requirements

Feedwater check VV-6-28B and reactor water cleanup return valve MO-12-68 are Appendix J leak tested in accordance with the plant Technical Specifications to ensure isolation capabilities for this penetration.

7.3.5 REQUEST FOR RELIEF

7.3.5.1 Components

Small control, solenoid, and check valves within Class 1 exempt portion of Control Rod Drive Hydraulic System as identified on P&ID 57.

7.3.5.2 Requirement from Which Relief Requested

Class 1 valves shall be categorized in accordance with Article IWV-2000 and tested in accordance with Article IWV-3000.

7.3.5.3 Justification

These small valves cannot be practically tested to Section XI criteria. They have not been categorized nor included in Table 7.2-1.

7.3.5.4 Testing in Lieu of Section XI Requirements

Scram testing of control rods is the only practical method of testing these small valves. Scram testing is performed on all control rods; consequently, all the affected small valves are functionally tested as part of the safety portion of the CRD system, near the end of each refueling outage. This frequency of testing is acceptable in accordance with plant Technical Specifications.

7.3.6 REQUEST FOR RELIEF

7.3.6.1 Components

Standby Liquid Control System discharge check valves VV-11-16 and VV-11-17.

7.3.6.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.6.3 Justification

These check valves are normally closed during plant operation, and plant design does not provide a practical method of testing them on a quarterly basis. To establish flow through them, the entire pump discharge piping must be purged of boronated solution, the explosive valves (XV-11-14 A or B) fired, and considerable manual valve movement must be performed which, during the performance of the testing, would prevent the system from performing its intended function.

7.3.6.4 Testing in Lieu of Section XI Requirements

The functional operability of these valves is confirmed while injecting demineralized water to the reactor pressure vessel once per operating cycle in accordance with plant Technical Specifications.

7.3.7 REQUEST FOR RELIEF

7.3.7.1 Components

RCIC and HPCI pump suction check valves VV-13-40 and VV-23-61.

7.3.7.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.7.3 Justification

These check valves are in the HPCI and RCIC pump suction lines from the torus. The exercising of these check valves will require operation of RCIC or HPCI pumps, recirculating the lower quality suppression pool water. The lines should be flushed, drained, refilled, and vented before routine Technical Specification surveillance tests (recirculation of condensate storage tank) are performed to avoid contamination of high quality condensate storage tank water. The process is time consuming and involves some degree of risk to the plant until the process is completed and the system is ready for service. Therefore, the exercising of the valve is not practical routinely on a quarterly basis during normal plant operation. The exercising during cold shutdown is also not practical because the main steam for the pump turbine is not available then.

7.3.7.4 Testing in Lieu of Section XI Requirements

These valves will be exercised by passing flow through them once per operating cycle.

7.3.8 REQUEST FOR RELIEF

7.3.8.1 Components

RCIC and HPCI turbine exhaust line vacuum relief valves VRV-13-139 (A, B, C, D) and VRV-23-140 (A, B, C, D).

7.3.8.2 Requirement from Which Relief Requested

Relief valve setpoints shall be tested in accordance with IWV-3512.

7.3.8.3 Justification

These valves are vacuum relief valves on the HPCI and RCIC turbine exhaust line to the torus. The valves are piped in a one out of two twice logic and as such cannot be individually tested without removing the valves. The vacuum relief valves are ordinary check valves and do not contain any spring for setpoint adjustment. They open simply by the differential pressure across their seats. Therefore, setpoint verification, required for a normal relief valve in accordance with IWV-3512, does not apply for these valves.

7.3.8.4 Testing in Lieu of Section XI Requirements

The valves are functional tested as a group by verifying passage of flow, to assure that a vacuum relief flow path exists through the valve arrangement. This test is performed quarterly.

7.3.9 REQUEST FOR RELIEF

7.3.9.1 Components

Core Spray discharge header stay-full accumulator level makeup solenoid valves SV-14-4224 and SV-14-4225. RHR discharge headers and head spray header stay-full accumulator level makeup solenoid valves SV-10-4221, SV-10-4222, and SV-10-4223.

7.3.9.2 Requirement from Which Relief Requested

Exercising of valves in accordance with the requirements of IWV-3412.

7.3.9.3 Justification

These small valves are not testable per Paragraph IWV-3412 or by plant design; however, the valves are functionally checked continuously during plant operation. During normal operation of the plant, these valves are being continuously exercised for making up the accumulator level and also during monthly surveillance testing of Core Spray pumps or RHR pumps and quarterly surveillance testing of the associated level switches. Further, the inoperable status of these valves will result in a low level condition in the accumulators which is annunciated in the control room. Failure of any of these valves does not inhibit the safety function of the affected ECCS.

7.3.9.4 Testing in Lieu of Section XI Requirements

Based on these considerations, the valves are considered to be in regular use and therefore need not be additionally exercised, provided the analysis and records of the observations of the valve operation are done in accordance with IWV-3414.

7.3.10 REQUEST FOR RELIEF

7.3.10.1 Components

Core Spray Condensate stay-full line check valves to pump discharge header VV-14-22 (A, B, C, D) and VV-14-23 (A, B, C, D). RHR header stay-full check valves VV-10-51, VV-10-63, VV-10-64, VV-10-73, VV-10-183 (A, B), and VV-10-184 (A, B).

7.3.10.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.10.3 Justification

These small valves are not testable by plant design; however, the valves are functionally checked continuously during plant operation. During normal operation of the plant, these valves are being continuously exercised to keep the pump discharge headers full and also during monthly surveillance testing of the pumps. Further, the inoperable status of these valves will result in a low level condition in the core spray stay-full accumulators which is annunciated in the control room. The consequence of failure of any of these small valves does not prevent the safety function of the affected ECCS.

7.3.10.4 Testing in Lieu of Section XI Requirements

Based on these considerations, the valves are considered to be in regular use and need not be additionally exercised, provided the analysis and records of the observations of the valve operation are done in accordance with IWV-3414.

7.3.11 REQUEST FOR RELIEF

7.3.11.1 Components

RHR Head Spray Nozzle check valve VV-10-N214M3.

7.3.11.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.11.3 Justification

This check valve is in the shutdown cooling line of the vessel head spray nozzle. Relief is requested from the requirement to exercise this valve quarterly in accordance with Paragraph IWV-3520. The head spray isolation valves, MO-10-32, 33 are automatically isolated by the primary containment isolation system when reactor pressure is above 75 psig. This valve is exercised by passing flow through it during reactor vessel head spray operation to accommodate the approach to the cold shutdown condition.

7.3.11.4 Testing in Lieu of Section XI Requirements

Exercising of the valve during reactor vessel head spray operation will be performed once per operating cycle.

7.3.12 REQUEST FOR RELIEF

7.3.12.1 Components

Emergency Service Water header check valves, VV-33-513, VV-33-514, and VV-33-516.

7.3.12.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.12.3 Justification

These valves provide emergency service water or emergency cooling water to safety-related heat exchangers if the normal cooling water supply (service water) is lost. Functional exercising of these valves is not practical during plant operation when the service water system is operating. Testing requires manually isolating the emergency service water system from the service water system and manual operation of several valves to establish the proper flow paths. These operations can result in temporary loss of cooling to safety-related heat exchangers and thereby jeopardize safety-related equipment and reactor operation and safety.

7.3.12.4 Testing in Lieu of Section XI Requirements

These valves shall be exercised once per operating cycle in accordance with the plant Technical Specifications.

7.3.13 REQUEST FOR RELIEF

7.3.13.1 Components

Emergency Service Water Booster Pump discharge check valve VV-48-0504 (A, B) and Emergency Cooling Water Pump discharge check valve VV-48-0-506.

7.3.13.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.13.3 Justification

Functional exercising of these valves is not practical during plant operation with the normal plant service water system in service. These valves provide emergency service water or emergency cooling water to safety-related heat exchangers if the normal cooling water supply (service water) is lost. Functional exercising of these valves is not practical during plant operation when the service

water system is operating. Exercising of these valves requires operation of the Emergency Service Water Booster Pump and Emergency Cooling Water Pump. Testing requires manually isolating the emergency service water system from the service water system and manual operation of several valves to establish the proper flow paths. These operations can result in temporary loss of cooling to safety-related heat exchangers and thereby jeopardize safety-related equipment and reactor operation and safety.

7.3.13.4 Testing in Lieu of Section XI Requirements

These valves shall be exercised once per operating cycle per unit, approximately every nine months, in accordance with plant Technical Specifications.

7.3.14 REQUEST FOR RELIEF

7.3.14.1 Components

RHR Fuel Pool Cooling check valves VV-19-MK273M3 (2 valves).

7.3.14.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.14.3 Justification

These check valves are in the RHR cooling water lines to the spent fuel pool. Normal periodic exercising is not practical due to valve and plant design. This line is used for augmentation of fuel pool cooling by the RHR system when a full core is unloaded. The line is not required for safe shutdown of the plant. Use of the RHR System cross-connection to inject RHR water into the spent fuel pool to exercise these valves would unnecessarily contaminate the spent fuel pool with corrosion products from the carbon steel piping within the RHR System.

7.3.14.4 Testing in Lieu of Section XI Requirements

Exercising of these valves is demonstrated whenever the RHR System is required to cool the spent fuel pool.

7.3.15 REQUEST FOR RELIEF

7.3.15.1 Components

Main Steam vacuum relief valves VRV-307A through H and J, K and L.

7.3.15.2 Requirement from Which Relief Requested

Relief valve setpoints shall be tested in accordance with IWV-3512.

7.3.15.3 Justification

These valves are the vacuum relief valves on the tail pipes from main steam relief valves to the torus. The setpoint of these valves cannot be adjusted and is determined by proper installation of a torsion spring between the valve body and disc. Valve maintenance is performed in accordance with a detailed procedure to assure proper valve assembly during maintenance.

7.3.15.4 Testing in Lieu of Section XI Requirements

In lieu of setpoint testing, the valve disc will be manually exercised once per operating cycle.

7.3.16 REQUEST FOR RELIEF

7.3.16.1 Components

Standby Liquid Control System discharge check valve VV-11-16.

7.3.16.2 Requirement from Which Relief Requested

Valve seat leakage tests shall be performed in accordance with IWV-3423.

7.3.16.3 Justification

This check valve is in the standby Liquid Control System injection line to the reactor. There is no test tap between VV-11-16 and XV-11-14 to monitor leakage, and thus it is not practical to perform such leak rate testing.

7.3.16.4 Testing in Lieu of Section XI Requirements

Appendix J rate testing is performed on VV-11-16 in accordance with plant Technical Specifications.

7.3.17 REQUEST FOR RELIEF

7.3.17.1 Components

ECCS pump minimum flow check valves VV-14-66 (A, B, C, D), Core Spray System VV-10-19 (A, B, C, D), RHR System VV-13-29 RCIC System, and VV-23-62 HPCI System.

7.3.17.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3522.

7.3.17.3 Justification

These check valves are downstream of the motor operated minimum flow recirculation valves on ECCS pumps. Plant design does not provide a method of proving the passage of flow through these check valves to demonstrate valve operability.

7.3.17.4 Testing in Lieu of Section XI Requirements

These valves are exercised during surveillance testing of these systems in accordance with the plant Technical Specifications.

7.3.18 REQUEST FOR RELIEF

7.3.18.1 Components

Instrument nitrogen supply check valves VV-51 (2 valves).

7.3.18.2 Requirement from Which Relief Requested

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.18.3 Justification

These check valves are in the nitrogen supply lines to pneumatic valve operators in containment. Plant design does not allow testing of these check valves unless the primary containment is accessible.

7.3.18.4 Testing in Lieu of Section XI Requirements

These valves shall be exercised once per operating cycle during Appendix J leak rate testing.

7.3.19 REQUEST FOR RELIEF

7.3.19.1 Components

Containment Atmospheric Control oxygen analyzer check valve VV-9-( ).

7.3.19.2 REQUEST FOR RELIEF

Check valves shall be exercised at least once every 3 months in accordance with IWV-3521.

7.3.19.3 Justification

This check valve is normally open during plant operation to allow return flow from the containment oxygen analyzer back to containment. The containment oxygen analyzer is required to ensure that the oxygen concentration in containment does not exceed 4% during reactor operation creating a potentially explosive atmosphere in containment. Since testing would require taking the analyzer out of service for a considerable length of time, such testing is not practical on a quarterly basis.

7.3.19.4 Testing in Lieu of Section XI Requirements

Once per operating cycle, the ability of this valve to check flow will be confirmed by a satisfactory leak rate test in accordance with plant Technical Specifications and the criteria of Appendix J to 10CFR50.

7.3.20 REQUEST FOR RELIEF

7.3.20.1 Components

Standby Gas Treatment System Butterfly valves AO-0-0470-1, AO-0-0470-2, AO-0-0475-1, AO-0-0475-2, AO-0-0476-1, AO-0-0476-2, AO-0-0469-1, and AO-0-0469-2.

7.3.20.2 Requirement from Which Relief Requested

Requirements to verify valve position indicator accuracy in accordance with IWV-3300.

7.3.20.3 Justification

These valves are butterfly valves in the supply to SBGT system and SBGT system filter isolation valves. Secondary containment isolation valves are tested by leak rate testing or by visually observing damper position via inspection ports in the ducts. The ducts at the SBGT system filter isolation valves and system supply valves do not have inspection ports to observe damper position. Plant design does not provide any other practical method of proving valve position for these valves.

7.3.20.4 Testing in Lieu of Section XI Requirements

Flow through these valves is verified during testing of secondary containment integrity.

7.3.21 REQUEST FOR RELIEF

7.3.21.1 Components

LPCI cross-tie valve MO-10-20.

7.3.21.2 Requirement from Which Relief Requested

Category A and B valves shall be exercised at least once every 3 months in accordance with IVW-3411.

7.3.21.3 Justification

This valve cross-connects the two LPCI injection loops. Plant Technical Specifications require this valve to be electrically locked in the closed position during reactor power operation. Operability of this valve in the open position has no safety-related function. Opening of the valve defeats the independence and redundancy of the LPCI loops and may result in a potential loss of the complete system in the event of a single failure in one loop. This valve is only opened occasionally, when shut down, for convenience, to allow flexibility in the use of equipment to provide shutdown cooling.

7.3.21.4 Testing in Lieu of Section XI Requirements

This valve is full stroke exercised once per operating cycle in accordance with plant Technical Specifications.

7.3.22 REQUEST FOR RELIEF

7.3.22.1 Components

RHR Suction valves MO-10-17 and MO-10-18, RHR Head Spray valves MO-10-32 and MO-10-33, Feedwater long path recirculation valves MO-6-38 (A, B), RHR Return valves MO-10-25 (A, B), HPCI Steam Supply valves MO-23-15 and 16, Core Spray Pump discharge piping valves MO-14-12 (A, B), RCIC Steam Supply valves MO-13-15 and 16, HPCI pump discharge pumping valve MO-23-19, and RCIC Pump discharge piping valve MO-13-21.

7.3.22.2 Requirement from Which Relief Requested

Requirements to perform pressure isolation leak rate testing in accordance with IWV-3423.

7.3.22.3 Justification

These motor-operated valves are pressure isolation valves associated with ECCS or primary containment isolation system. Relief is requested from the requirement to perform pressure isolation valve leak rate testing. These valves, when closed, prevent intersystem LOCA from the reactor coolant system to low pressure piping.

NUREG-0677: "The Probability of Intersystem LOCA: Impact Due to Leak Testing and Operational Changes" addresses pressure isolation valve testing, and states that motor-operated valves "do not exhibit the leak rate mode of failure because the valve is under positive control by its motor operator and because position indication is provided. Any small seat leakage that did occur is not expected to be large enough to cause an intersystem LOCA." The only failure mode of these valves that would result in intersystem LOCA is catastrophic failure of the valve internals. Pressure isolation valve testing during reactor startup would not assist in determining if such failure would occur. The pressure on the low pressure side of the following valves (MO-10-17, 18, 25 A, B, 32, 33; MO-14-12 A, B) is continuously monitored by pressure switches which annunciate on a high pressure condition. These pressure switches are functionally tested annually. Relief valves are also installed on the low pressure side of these isolation valves. These relief valves are tested in accordance with Paragraph IWV-3512. In the letter from the NRC to LWR licensees, 2/3/80, concerning LWR primary coolant system pressure isolation valves, this surveillance is considered an acceptable method of reducing the probability of an intersystem LOCA.

7.3.22.4 Testing in Lieu of Section XI Requirements

In lieu of pressure isolation valve leak rate testing, each valve will be checked in the closed position during reactor startup and after surveillance testing which operates these valves.

7.3.23 REQUEST FOR RELIEF

7.3.23.1 Components

Categories A and B valves with electric motor operators.

7.3.23.2 Requirement from Which Relief Requested

Valve stroke time shall be compared with the previous test results in accordance with Paragraph IWV-3417.

7.3.23.3 Justification

Electrically driven motor operator stroke times do not vary significantly. Excessive valve resistance results in motor overcurrent, and an electrical tripping of the motor operator. Comparing the evaluation to previous test data would therefore be meaningless.

7.3.23.4 Testing in Lieu of Section XI Requirements

An evaluation is performed by comparing the stroke time on electrically driven valves with the more conservative of the following two limits: (1) the limiting value of full stroke determined by the Technical Specification; or by some other technical evaluation that establishes the criteria for determining the operability status

of the valve, or (2) increase in stroke time of 25 percent or more, from the normal or expected stroke time, with stroke times greater than 10 seconds; or an increase in stroke time 50 percent or more, from the normal or expected stroke time, for valves with stroke times less than or equal to 10 seconds.

7.3.24 REQUEST FOR RELIEF

7.3.24.1 Components

Power operated valves with a specified limiting stroke time of less than 4 seconds.

7.3.24.2 Requirements from Which Relief Requested

When an increase in stroke time of 50 percent or more is observed, the test frequency shall be increased to once each month until corrective action is taken, in accordance with Paragraph IWV-3417.

7.3.24.3 Justification

A valve with a specified limiting stroke time of 10 seconds need only have the stroke time measured to the nearest second. Measuring 50 percent of the stroke time, of a valve with a specified limiting stroke time of less than 4 seconds, would require measuring fractions of a second which is in contradiction to the scope of testing. Additionally, measuring 50 percent or more of a specified limiting stroke time of less than 4 seconds would be highly subject to interpretation by the operating/testing personnel and would not provide meaningful information.

7.3.24.4 Testing in Lieu of Section XI Requirements

Valves with a stroke time of less than 4 seconds will not be stroked on a monthly basis if the specified limiting stroke time is exceeded by 50 percent or more. Instead, if the specified limiting stroke time is exceeded, limiting conditions for operation shall be analyzed as identified with the plant Technical Specifications.

7.3.25 REQUEST FOR RELIEF

7.3.25.1 Components

Power operated valves with a specified limiting stroke time of less than 2 seconds, such as solenoid operated valves.

7.3.25.2 Requirements from Which Relief Requested

Measurement of stroke time in accordance with Paragraph IWV-3413 and corrective action per Paragraph IWV-3417.

7.3.25.3 Justification

Power operated valves with a specified limiting stroke time of less than 2 seconds by design, cannot be measured to the nearest second.

7.3.25.4 Testing in Lieu of Section XI Requirements

In lieu of stroke time measurements, the valve shall be checked for operability and if it fails to operate, limiting conditions for operation shall be analyzed as identified with the plant Technical Specifications.

7.3.26 COMPONENTS REQUIRING RELIEF

7.3.26.1 Components

All motor-operated valves with remote position indicators.

7.3.26.2 Requirement from Which Relief Requested

All motor-operated valves with remote position indicators observed in accordance with Subarticle IWV-3300.

7.3.26.3 Justification

Our present program for the adjustment and verification of the limit switches on motor-operated valves ensures that the remote valve indicators accurately reflect valve operations. After maintenance on the valve or its operator, the limit switches are adjusted in accordance with a maintenance procedure and the activity documented in the procedure. The valve is stroked to verify proper operation after the adjustments and this fact is documented in our maintenance records. This program satisfies the intent of Subarticle IWV-3300.

7.3.26.4 Testing in Lieu of Section XI Requirements

The maintenance program described above is performed to satisfy the intent of Subarticle IWV-3300 on motor-operated valves.

7.3.27 REQUEST FOR RELIEF

7.3.27.1 Components

Category A valves.

7.3.27.2 Requirement from Which Relief Requested

Method for determining valve seat leakage in accordance with Subsubarticle IWV-3420.

7.3.27.3 Justification

The methods described do not permit leak rate testing during reactor startup or power operation, or present a possible personnel safety hazard in the event a telltale drain is opened for leak rate testing.

7.3.27.4 Testing in Lieu of Section XI Requirements

In addition to the methods described in Subsubarticle IWV-3420, the following method may be used to verify leak-tightness. One or more normally closed valves on the line shall be closed and the leakage rate determined by measuring and evaluating the rate of pressure increase in an isolated section of the line adjacent to the pressure isolation valves. These methods may apply the requirements of the NRC generic letter on leak rate testing pressure isolation valves dated February 23, 1980.

7.3.28 REQUEST FOR RELIEF

7.3.28.1 Components

All Class 1, Class 2, and Class 3 valves requiring testing per Subsection IWV.

7.3.28.2 Requirement from Which Relief is Requested

Requirements of Article IWV-6000 to provide special tests and records management for inservice testing of valves.

7.3.28.3 Justification

Existing plant surveillance test procedures document most of the special test conditions and parameters identified in the Subsubsection on IWV of Section XI.

7.3.28.4 Alternate to Section XI Requirements

Surveillance tests are reviewed and revised as required to incorporate the necessary documentation to meet Section XI requirements for valve testing. Surveillance tests are retained at the plant site and are available for audit by the enforcement authority.

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-33-972	Gate	12"	Emergency S.W.	M-315	(F-2)	B	F	Q		(7.3) 2,23,28
AO-33-O-241-A	Dia.	6"	Emergency S.W.	M-315	(D-7)	B	F	Q	Common	(7.3) 2,24,28
AO-33-O-241-B					(D-7)					
AO-33-O-241-C					(D-6)					
AO-33-O-241-D					(D-6)					
AO-33-334-A	Dia.	2"	Emergency S.W.	M-315	(G-3)	B	F	Q		(7.3) 2,24,28
AO-33-334-B					(G-3)					
AO-33-333-A	Dia.	1.5"	Emergency S.W.	M-315	(G-3)	B	F	Q		(7.3) 2,24,28
AO-33-333-B					(G-3)					
AO-33-335-A	Dia.	2"	Emergency S.W.	M-315	(G-7)	B	F	Q		(7.3) 2,24,28
AO-33-335-B					(G-6)					
AO-33-335-C					(G-6)					
AO-33-335-D					(G-6)					
AO-33-335-E					(G-5)					
AO-33-335-F					(G-5)					
AO-33-335-G					(G-4)					
AO-33-335-H					(G-4)					
AO-33-336-A	Dia.	1.5"	Emergency S.W.	M-315	(G-7)	B	F	Q		(7.3) 2,24,28
AO-33-336-B					(G-6)					
AO-33-336-C					(G-6)					
AO-33-336-D					(G-6)					
AO-33-336-E					(G-5)					
AO-33-336-F					(G-5)					
AO-33-336-G					(G-4)					
AO-33-336-H					(G-4)					

*See key or the exceptions at the end of this table.

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-33-515-A VV-33-515-B	Testable Check	20"	Emergency S.W.	M-315	(B-7) (B-6)	C	M	Q		(7.3) 2,28
VV-33-516	Check	12"	Emergency S.W.	M-315	(F-2)	C	V	A		(7.3) 2,12,28
VV-33-513	Check	6"	Emergency S.W.	M-315	(F-2)	C	V	A		(7.3) 2,12,28
VV-33-514	Check	6"	Emergency S.W.	M-315	(F-2)	C	V	A		(7.3) 2,12,28
VV-32-502-A VV-32-502-B VV-32-502-C VV-32-502-D	Testable Check	14"	High Pres. Service Wtr.	M-315	(B-4) (B-3) (B-4) (B-2)	C	V	Q		(7.3) 2,28
MO-34-2374 MO-34-2373	Gate	4"	React. Bldg. CW	M-316	(E-9) (E-6)	A	F	C	(7), J	(7.3) 1,2,23, 27,28
VV-0-( ) VV-0-( ) VV-0-( ) VV-0-( )	Check	2"	Diesel Oil	M-323	(H-6) (G-6) (F-6) (E-6)	C	V	Q	Common	(7.3) 2,28
MO-44-2201-A MO-44-2201-B	Gate	9"	Chilled Water	M-327	(E-3) (D-3)	A	F	C	(8), J	(7.3) 1,2,23, 27,28
MO-44-2200-A MO-44-2200-B	Gate	9"	Chilled Water	M-327	(D-3) (C-3)	A	F	C	(8), J	(7.3) 1,2,23, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-48-0-506	Testable Check	18"	Emerg. Cooling	M-330	(G-3)	C	V	A	Common	(7.3) 2,13,28
VV-48-0-504-A VV-48-0-504-B	Check	16"	Emerg. Cooling	M-330	(E-7) (D-7)	C	V	A	Common	(7.3) 2,13,28
MO-32-486	Gate	24"	High Pres. Service Wtr.	M-330	(D-9)	B	F	Q		(7.3) 2,23,28
MO-48-0-498	Gate	20"	Emergency S.W.	M-330	(D-9)	B	F	Q	Common	(7.3) 2,23,28
MO-48-804-A MO-48-804-B	Butterfly	24"	Emerg. Cooling	M-330	(C-3) (C-2)	B	F	Q		(7.3) 2,23,28
MO-48-0-841	Gate	18"	Emerg. Cooling	M-330	(G-3)	B	F	Q	Common	(7.3) 2,23,28
MO-48-0-501-A MO-48-0-501-B MO-48-0-501-C	Gate	16"	Emerg. Cooling	M-330	(D-3) (D-2) (D-2)	B	F	Q	Common	(7.3) 2,23,28
MO-48-0-502-A MO-48-0-502-B MO-48-0-502-C	Gate	16"	Emerg. Cooling	M-330	(E-3) (E-3) (E-2)	B	F	Q	Common	(7.3) 2,23,28
MO-32-803	Gate	12"	High Pres. Service Wtr.	M-330	(E-8)	B	F	Q	Emerg Cool. Cross.	(7.3) 2,23,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-51-2969-A AO-51-2969-B	Dia.	1"	Inst. Nitrogen	M-333	(G-4) (F-4)	A	F	Q	J	(7.3) 1,2,24, 27,28
SV-51-8130-A SV-51-8130-B	Gate	1"	Inst. Nitrogen	M-333	(C-4) (B-4)	A	F	Q	J	(7.3) 1,2,25, 27,28
VV-51-( ) VV-51-( )	Check	1"	Inst. Nitrogen	M-333	(G-4) (F-4)	A/C	V	A	J	(7.3) 1,2,18, 27,28
SV-51-8100	Gate	2"	Inst. Nitrogen	M-333	(D-5)	A	F	Q	J	(7.3) 1,2,25, 27,28
AO-51-4235	Gate	2"	Inst. Nitrogen	M-333	(D-5)	A	F	Q	J	(7.3) 1,2,24, 27,28
VV-51-( ) VV-51-( )	Check	1"	Back-up Inst. Nitrogen	M-333	(C-4) (B-4)	A/C	V	Q	J	(7.3) 1,2,18, 27,28
AO-1-86-A AO-1-86-B AO-1-86-C AO-1-86-D	Globe	26"	Main Steam	M-351	(G-2)	A	F/P	Q	(1), J	(7.3) 1,2,27, 28
AO-1-80-A AO-1-80-B AO-1-80-C AO-1-80-D	Globe	26"	Main Steam	M-351	(G-4)	A	F/P	Q	(1), J	(7.3) 1,2,27, 28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
RV-1-71-A	Pres.	6"	Main Steam	M-351	(G-5)	C	S	2	(2),(3)	(7.3) 2,28
RV-1-71-B	Relief					B	M	A		
RV-1-71-C										
RV-1-71-D										
RV-1-71-E										
RV-1-71-F										
RV-1-71-G										
RV-1-71-H										
RV-1-71-J										
RV-1-71-K										
RV-1-71-L										
VRV-307-A	Vacuum	12"	Main Steam	M-351	(C-3)	C	M	A		(7.3) 2,15,28
VRV-307-B	Relief									
VRV-307-C										
VRV-307-D										
VRV-307-E										
VRV-307-F										
VRV-307-G										
VRV-307-H										
VRV-307-J										
VRV-307-K										
VRV-307-L										
RV-1-70-A	Pres.	6"	Main Steam	M-351	(G-5)	C	S	2	(2),(3)	(7.3) 2,28
RV-1-70-B	Relief					B	M	2		
MO-1-74	Globe	3"	Main Steam	M-351	(G-4)	A	F	C	(9), J	(7.3) 1,2,23, 24,27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-1-77	Globe	3"	Main Steam	M-351	(G-3)	A	F	C	(9), J	(7.3) 1,2,23, 24,27,28
MO-2-43-A MO-2-43-B	Gate	28"	Reactor Recirc.	M-351	(C-6)	B	F	C	(4)	(7.3) 2,23,28
MO-2-53-A MO-2-53-B	Gate	28"	Reactor Recirc.	M-351	(C-5)	B	F	C	(4)	(7.3) 2,23,28
VV-6-28-A VV-6-28-B	Check	24"	reedwater	M-351	(F-6) (E-6)	A/C	F	A	J	(7.3) 1,2,3, 27,28
VV-6-96-A VV-6-96-B	Check	24"	Feedwater	M-351	(F-7) (E-7)	A/C	F	A	J	(7.3) 1,2,3, 27,28
MO-6-38-A MO-6-38-B	Gate	10"	Feedwater	M-351	(F-7) (E-7)	A	F	A	(10),J,PI	(7.3) 1,2,22, 23,27,28
VV-11-17	Check	15"	Standby Liquid	M-351	(E-4)	A/C	V	A	PI	(7.3) 1,2,6, 27,28
VV-11-16	Check	15"	Standby Liquid	M-351	(E-3)	A/C	V	A	J,PI	(7.3) 1,2,6, 16,27,28
AO-1-316 AO-1-317	Dia.	0.75"	Main Steam	M-351	(B-6) (B-8)	A	F	Q	J	(7.3) 1,2,24, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-2-39 AO-2-40	Dia.	0.75"	Reactor Recirc.	M-351	(B-7) (B-7)	A	F	Q	J	(7.3) 1,2,24, 27,28
MO-12-15	Gate	6"	React. Cleanup	M-354	(C-2)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-12-18	Gate	6"	React. Cleanup	M-354	(C-3)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-12-68	Globe	4"	React. Cleanup	M-354	(B-7)	A	F	Q	J	(7.3) 1,2,23, 27,28
VV-12-62	Check	4"	React. Cleanup	M-354	(B-5)	C				(7.3) 2,4,28
CV-3-33 CV-3-36	Dia.	1"	Ctrl. Rod Drive	M-356	(D-6) (D-6)	A	F	Q	J	(7.3) 1,2,5, 27,28
CV-3-32-A CV-3-32-B	Dia.	1"	Ctrl. Rod Drive	M-356	(B-3) (B-10)	A	F	Q	J	(7.3) 1,2,5, 27,28
CV-3-35-A CV-3-35-B	Dia.	1"	Ctrl. Rod Drive	M-356	(B-3) (B-11)	A	F	Q	J	(7.3) 1,2,5, 27,28
XV-11-14-A XV-11-14-B	Gate	6"	Standby Liquid	M-358	(E-2) (F-2)	B/D	F/E	A/2	(6)	(7.3) 2,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
RV-11-39-A RV-11-39-B	Pres. Relief	1"	Standby Liquid	M-358	(E-6) (J-6)	C	S	A		(7.3) 2,28
VV-11-43-A VV-11-43-B	Check	15"	Standby Liquid	M-358	(F-5) (J-5)	C	V	Q		(7.3) 2,28
MO-13-15	Gate	3"	RCIC	M-359	(C-6)	A	F	Q	J, (PI)	(7.3) 1,2,22,23, 27,28
MO-13-16	Gate	3"	RCIC	M-359	(C-7)	A	F	Q	J, (PI)	(7.3) 1,2,22,23, 27,28
MO-13-21	Gate	6"	RCIC	M-359	(E-7)	A	F	Q	J, PI	(7.3) 1,2,22,23, 27,28
MO-13-41	Gate	6"	RCIC	M-359	(L-8)	B	F	Q		(7.3) 2,23,28
MO-4244	Gate	3"	RCIC	M-359	(H-7)	A	F	Q	J	(7.3) 1,2,23, 27,28
AO-13-22	Check	6"	RCIC	M-359	(E-7)	A/C	M	C	(5), PI	(7.3) 1,2,27,28
VV-13-50	Check	10"	RCIC	M-359	(J-8)	A/C	V	Q	J	(7.3) 1,2,27,28
VV-13-29	Check	2"	RCIC	M-359	(H-8)	C	-	-		(7.3) 2,17,28
VV-13-38	Check	2"	RCIC	M-359	(J-9)	A/C	V	Q	J	(7.3) 1,2,27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-13-18	Gate	6"	RCIC	M-359	(D-11)	B	F	Q		(7.3) 2,24,27, 28
MO-13-20	Gate	6"	RCIC	M-359	(E-8)	B	F	Q		(7.3) 2,24,27, 28
MO-13-39	Gate	6"	RCIC	M-359	(D-10)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-13-30	Globe	4"	RCIC	M-359	(B-8)	B	F	Q		(7.3) 2,23,28
MO-13-131	Globe	4"	RCIC	M-359	(E-13)	B	F	Q		(7.3) 2,23,28
MO-13-27	Globe	2"	RCIC	M-359	(H-8)	B	F	Q		(7.3) 2,23,28
AO-13-32	Dia.	1"	RCIC	M-359	(F-14)	B	F	Q		(7.3) 2,24,28
AO-13-34	Dia.	1"	RCIC	M-359	(J-14)	B	F	Q		(7.3) 2,24,28
AO-13-35	Dia.	1"	RCIC	M-359	(K-14)	B	F	Q		(7.3) 2,24,28
VRV-13-139-A VRV-13-139-B VRV-13-139-C VRV-13-139-D	Check	2"	RCIC	M-359	(J-6)	C	V	Q		(7.3) 2,8,28
VV-13-40	Check	6"	RCIC	M-359	(L-9)	C	V	A		(7.3) 2,7,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-13-19	Check	6"	RCIC	M-359	(D-11)	C	V	Q		(7.3) 2,28
AO-13-137 (4240)	Dia.	2"	RCIC	M-360	(J-9)	A	F	Q	J	(7.3) 1,2,27,28
AO-13-138 (4241)	Dia.	2"	RCIC	M-360	(J-9)	A	F	Q	J	(7.3) 2,24,29
RV-13-25	Pres. Relief	1.5"	RCIC	M-360	(C-8)	C	S	T		(7.3) 2,28
RV-13-26	Pres. Relief	1"	RCIC	M-360	(J-7)	C	S	T		(7.3) 2,28
AO-13-12 AO-13-13	Dia.	1"	RCIC	M-360	(L-8) (L-8)	B	F	Q		(7.3) 2,24,28
MO-13-132	Globe	2"	RCIC	M-360	(H-7)	B	F	Q		(7.3) 2,23,28
MO-13-4487 (*)	Globe	3"	RCIC	M-360	(E-12)	B	F	Q		(7.3) 2,23,28
VV-13-133 VV-13-134	Check	2"	RCIC	M-360	(K-9) (K-11)	C	V	Q		(7.3) 2,28
MO-10-25-A MO-10-25-B	Gate	24"	RHR	M-361	(C-5) (C-9)	A	F	Q	J, PI	(7.3) 1,2,22,23 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-10-46-A AO-10-46-B	Check	24"	RHR	M-361	(D-5) (D-9)	A/C	M	C	(5),J,PI	(7.3) 1,2,27,28
MO-10-32	Gate	6"	RHR	M-361	(B-6)	A	F	C	(11),J,PI	(7.3) 1,2,22,23 27,28
MO-10-33	Gate	6"	RHR	M-361	(A-5)	A	F	C	(11),J,PI	(7.3) 1,2,22,23 27,28
VV-10-N214M3	Check	6"	RHR	M-361	(B-7)	C	V	A		(7.3) 2,11,28
MO-10-17	Gate	20"	RHR	M-361	(F-7)	A	F	C	(11),J,PI	(7.3) 1,2,22,23, 27,28
MO-10-18	Gate	20"	RHR	M-361	(E-7)	A	F	C	(11),J,PI	(7.3) 1,2,22,23, 27,28
MO-10-34-A MO-10-34-B	Globe	18"	RHR	M-361	(D-3) (D-10)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-10-31-A MO-10-31-B	Gate	12"	RHR	M-361	(B-6) (B-8)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-10-38-A MO-10-38-B	Globe	4"	RHR	M-361	(D-3) (D-11)	A	F	Q	J	(7.3) 1,2,23, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-10-15-A MO-10-15-B MO-10-15-C MO-10-15-D	Gate	20"	RHR	M-361	(K-6) (K-8) (H-6) (H-8)	B	F	Q		(7.3) 2,23,28
MO-10-154-A MO-10-154-B	Angle Globe	24"	RHR	M-361	(C-4) (C-9)	B	F	Q		(7.3) 2,23,28
MO-10-20	Gate	24"	RHR	M-361	(F-3)	B	F	A		(7.3) 2,21,23,28
AO-10-163-A AO-10-163-B	Dia.	1"	RHR	M-361	(E-6) (E-9)	A	F	Q	J	(7.3) 1,2,24, 27,28
MO-10-39-A MO-10-39-B	Gate	18"	RHR	M-361	(C-3) (C-11)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-10-26-A MO-10-26-B	Gate	12"	RHR	M-361	(B-5) (B-8)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-10-16-A MO-10-16-B MO-10-16-C MO-10-16-D	Globe	3"	RHR	M-361	(J-4) (J-10) (H-4) (H-10)	B	F	Q		(7.3) 2,23,28
SV-10-4221	Gate	3"	RHR	M-361	(E-1)	B	-	N		(7.3) 2,9,28
SV-10-4222	Gate	3"	RHR	M-361	(F-1)	B	-	N		(7.3) 2,9,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
SV-10-4223	Gate	3"	RHR	M-361	(F-1)	B	-	N		(7.3) 2,9,28
RV-10-35-A RV-10-35-B	Pres. Relief	1"	RHR	M-361	(C-2) (C-12)	C	S	T		(7.3) 2,28
RV-10-44	Pres. Relief	1"	RHR	M-361	(A-5)	C	S	T		(7.3) 2,28
RV-10-40	Pres. Relief	1"	RHR	M-361	(H-6)	C	S	T		(7.3) 2,28
MO-10-174	Gate	18"	RHR	M-361	(E-13)	B	F	Q		(7.3) 2,23,28
MO-10-176	Gate	18"	RHR	M-361	(E-13)	B	F	Q		(7.3) 2,23,28
AO-10-175	Dia.	1"	RHR	M-361	(E-13)	B	F	Q		(7.3) 2,28
RV-10-72-A RV-10-72-B RV-10-72-C RV-10-72-D	Pres. Relief	1"	RHR	M-361	(J-9) (K-9) (J-5) (K-5)	C	S	T		(7.3) 2,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
RV-10- -A	Pres.	3"	RHR	M-361	(K-3)	C	S	T		(7.3) 2,28
RV-10- -B	Relief				(NA)					
RV-10- -C					(NA)					
RV-10- -D					(NA)					
RV-32- -A	Pres.	2"	High Pres.	M-361	(J-3)	C	S	T		(7.3) 2,28
RV-32- -B	Relief		Service Wtr.		(NA)					
RV-32- -C					(NA)					
RV-32- -D					(NA)					
VV-10-48-A	Check	20"	RHR	M-361	(K-3)	C	V	Q		(7.3) 2,28
VV-10-48-B					(K-2)					
VV-10-48-C					(J-3)					
VV-10-48-D					(J-11)					
VV-10-19-A	Check	2"	RHR	M-361	(K-4)	C	-	-		(7.3) 2,17,28
VV-10-19-B					(J-10)					
VV-10-19-C					(H-4)					
VV-10-19-D					(H-10)					
VV-10-51	Check	2"	RHR	M-361	(F-8)	C	-	N		(7.3) 2,10,28
VV-10-63	Check	2"	RHR	M-361	(A-8)	C	-	N		(7.3) 2,10,28
VV-10-64	Check	2"	RHR	M-361	(A-8)	C	-	N		(7.3) 2,10,28
VV-10-73	Check	2"	RHR	M-361	(F-8)	C	-	N		(7.3) 2,10,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-10-183-A VV-10-183-B	Check	2"	RHR	M-361	(A-7) (A-11)	C	-	N		(7.3) 2,10,28
VV-10-184-A VV-10-184-B	Check	2"	RHR	M-361	(A-7) (A-11)	C	-	N		(7.3) 2,10,28
VV-10-71-A VV-10-71-B	Gate	2"	RHR	M-361	(B-3) (B-11)	B	-	N		(7.3) 2,28
MO-32-89-A MO-32-89-B MO-32-89-C MO-32-89-D	Globe	12"	High Pres. Service Wtr.	M-361	(NA) (J-14) (NA) (NA)	B	F	Q		(7.3) 2,23,28
MO-14-12-A MO-14-12-B	Gate	12"	Core Spray	M-362	(D-5) (B-5)	A	F	Q	J, PI	(7.3) 1,2,22, 23,27,28
MO-14-26-A MO-14-26-B	Globe	10"	Core Spray	M-362	(B-7) (C-7)	B	F	Q		(7.3) 2,23,28
AO-14-13-A AO-14-13-B	Check	12"	Core Spray	M-362	(D-3) (B-3)	A/C	M	C	(5), J, PI	(7.3) 1,2,24, 27,28
AO-14-15-A AO-14-15-B	Gate	1"	Core Spray	M-362	(D-3) (B-3)	A	F	Q	J	(7.3) 1,2,24, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-14-11-A MO-14-11-B	Gate	12"	Core Spray	M-362	(D-7) (B-7)	B	F	Q		(7.3) 2,23,28
MO-14-5-A MO-14-5-B MO-14-5-C MO-14-5-D	Globe	3"	Core Spray	M-362	(E-7) (E-9) (E-8) (E-11)	B	F	Q		(7.3) 2,23,28
VV-14-66-A VV-14-66-B VV-14-66-C VV-14-66-D	Check	3"	Core Spray	M-362	(E-7) (E-9) (E-9) (E-10)	C	-	-		(7.3) 2,17,28
MO-14-70 MO-14-71	Gate	4"	Torus Water C.U.	M-362	(H-10) (H-10)	A	F	Q	J	(7.3) 1,2,23, 27,28
SV-14-4224	Globe	1"	Core Spray	M-362	(B-6)	B	-	N		(7.3) 2,9,28
SV-14-4225	Globe	1"	Core Spray	M-362	(C-6)	B	-	N		(7.3) 2,9,28
VV-14-10-A VV-14-10-B VV-14-10-C VV-14-10-D	Test-able Check	12"	Core Spray	M-362	(E-6) (E-11) (E-8) (E-9)	C	V	Q		(7.3) 2,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-14-22-A VV-14-22-B VV-14-22-C VV-14-22-D	Check	2"	Core Spray	M-362	(D-7) (D-10) (D-10) (D-11)	C	-	N		(7.3) 2,10,28
VV-14-23-A VV-14-23-B VV-14-23-C VV-14-23-D	Check	2"	Core Spray	M-362	(D-7) (D-10) (D-10) (D-11)	C	-	N		(7.3) 2,10,28
RV-14-20-A RV-14-20-B	Pres. Relief	2"	Core Spray	M-362	(D-7) (D-11)	C	S	T		(7.3) 2,28
VV-19-MK237M3	Check	12"	Fuel Pool Cool.	M-363	(A-11)	C	V	-	RHR Cross	(7.3) 2,14,28
VV-19-MK237M3	Check	12"	Fuel Pool Cool.	M-363	(A-11)	C	V	-	RHR Cross	(7.3) 2,14,28
VRV-19-2204-C VRV-19-2204-D	Vacuum Relief	-	Fuel Pool Cool.	M-363	(B-11) (B-11)	C	M	Q		(7.3) 2,28
MO-23-15	Gate	10"	HPCI	M-365	(D-4)	A	F	Q	J, PI	(7.3) 1,2,22,23, 27,28
MO-23-16	Gate	10"	HPCI	M-365	(D-6)	A	F	Q	J, PI	(7.3) 1,2,22,23, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-23-18	Check	14"	HPCI	M-365	(H-5)	A/C	M	C	(5), J, PI	(7.3) 1,2,27,28
VV-23-65	Check	20"	HPCI	M-365	(J-5)	A/C	V	Q	J	(7.3) 1,2,27,28
VV-23-56	Check	2"	HPCI	M-365	(K-5)	A/C	V	Q	J	(7.3) 1,2,27,28
MO-23-58	Gate	16"	HPCI	M-365	(M-7)	B	F	Q		(7.3) 2,23,28
MO-23-19	Gate	14"	HPCI	M-365	(H-5)	A	F	Q	J, PI	(7.3) 1,2,22,23, 27,28
MO-23-25	Globe	4"	HPCI	M-365	(J-8)	B	F	Q		(7.3) 2,23,28
MO-23-31	Gate	4"	HPCI	M-365	(E-8)	B	F	Q		(7.3) 2,23,28
MO-23-4244A	Gate	3"	HPCI	M-365	(J-2)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-23-17	Gate	16"	HPCI	M-365	(E-11)	B	F	Q		(7.3) 2,23,28
MO-23-57	Gate	16"	HPCI	M-365	(E-11)	A	F	Q	J	(7.3) 1,2,23, 27,28
MO-23-20	Gate	14"	HPCI	M-365	(H-6)	B	F	Q		(7.3) 2,23,28
MO-23-14	Gate	10"	HPCI	M-365	(F-13)	B	F	Q		(7.3) 2,23,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
MO-23-21	Globe	10"	HPCI	M-365	(E-6)	B	F	Q		(7.3) 2,23,28
MO-23-24	Gate	4"	HPCI	M-365	(D-8)	B	F	Q		(7.3) 2,23,28
AO-23-42	Dia.	1"	HPCI	M-365	(K-14)	B	F	Q		(7.3) 2,24,28
AO-23-43	Dia.	1"	HPCI	M-365	(K-15)	B	F	Q		(7.3) 2,24,28
AO-23-53	Dia.	1"	HPCI	M-365	(H-13)	B	F	Q		(7.3) 2,24,28
VRV-23-140-A VRV-23-140-B VRV-23-140-C VRV-23-140-D	Check	3"	HPCI	M-365	(J-2)	C	V	Q		(7.3) 2,8,28
VV-23-32	Check	16"	HPCI	M-365	(E-11)	C	V	Q		(7.3) 2,28
VV-23-61	Check	16"	HPCI	M-365	(M-6)	C	V	A		(7.3) 2,7,28
VV-23-22	Check	10"	HPCI	M-365	(D-6)	C	V	Q		(7.3) 2,28
VV-23-62	Check	4"	HPCI	M-365	(L-7)	C	-	-		(7.3) 2,17,28
AO-23-4247	Dia.	2"	HPCI	M-366	(J-10)	A	F	Q	J	(7.3) 1,2,24, 27,28
AO-23-4248	Dia.	2"	HPCI	M-366	(J-10)	A	F	Q	J	(7.3) 1,2,24, 27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
RV-23-34	Pres. Relief	1.5"	HPCI	M-366	(C-8)	C	S	T		(7.3) 2,28
RV-23-66	Pres. Relief	1"	HPCI	M-366	(K-11)	C	S	T		(7.3) 2,28
VV-23-130	Check	2"	HPCI	M-366	(K-8)	C	F	Q		(7.3) 2,28
VV-23-131	Check	3"	HPCI	M-366	(K-8)	C	F	Q		(7.3) 2,28
AO-23-39 AO-23-40	Dia.	1"	HPCI	M-366	(L-10) (M-10)	B	F	Q		(7.3) 2,24,28
AO-23-4807	Gate	1"	HPCI	M-365	(D-6)	A	F	Q	J	(7.3) 1,2,24, 27,28
VRV-23-4998-A VRV-23-4998-B	Check	2"	HPCI	M-366	(D-11) (E-11)	C	V	Q		(7.3) 2,28
PSD-23-7	Rupt. Disc	16"	HPCI	M-366	(D-10)	D	N	N	Not a testable design.	--
PSD-23-6	Rupt. Disc	16"	HPCI	M-366	(D-10)	D	N	N	Not a testable design.	--
HO-23-4513 (*)	Gate	10"	HPCI	M-366	(D-12)	B	F	Q		(7.3) 2,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-9-2520	Butterfly	24"	Cont.Atm.Cont.	M-367	(E-6)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2505	Butterfly	18"	Cont.Atm.Cont.	M-367	(E-5)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2519	Butterfly	6"	Cont.Atm.Cont.	M-367	(F-6)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2506	Butterfly	18"	Cont.Atm.Cont.	M-367	(G-7)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2507	Butterfly	18"	Cont.Atm.Cont.	M-367	(G-7)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2511	Butterfly	18"	Cont.Atm.Cont.	M-367	(E-7)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2512	Butterfly	18"	Cont.Atm.Cont.	M-367	(E-8)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2502-A	Butterfly	20"	Cont.Atm.Cont.	M-367	(D-4)	A	F	Q	J	(7.3) 1,2,27,28
AO-9-2502-B					(D-8)					
AO-9-2521-A	Butterfly	18"	Cont.Atm.Cont.	M-367	(E-5)	A	L	B	J, Passive	(7.3) 1,2,27,28
AO-9-2521-B					(E-5)					

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-9-2523	Dia.	1"	Cont.Atm.Cont	M-367	(F-6)	A	F	Q	J	(7.3) 1,2,24,27 28
AO-9-2509	Dia.	1"	Cont.Atm.Cont.	M-367	(G-7)	A	F	Q	J	(7.3) 1,2,24,27 28
AO-9-2510	Dia.	1"	Cont.Atm.Cont.	M-367	(H-7)	A	F	Q	J	(7.3) 1,2,24,27 28
AO-9-2514	Dia.	1"	Cont.Atm.Cont.	M-367	(F-8)	A	F	Q	J	(7.3) 1,2,24,27 28
AO-9-2513	Dia.	1"	Cont.Atm.Cont.	M-367	(F-7)	A	F	Q	J	(7.3) 1,2,24,27 28
VV-9-( )	Check	1"	Cont.Atm.Cont.	M-367	(F-6)	A/C	V	Q	J	(7.3) 1,2,27,28
VV-9-( )	Check	1"	Cont.Atm.Cont.	M-367	(F-6)	A/C	V	Q	J	(7.3) 1,2,27,28
VV-9-26-A VV-9-26-B	Check	20"	Cont.Atm.Cont.	M-367	(C-4) (C-8)	A/C	M	Q	J	(7.3) 1,2,27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-9-2504-A	Check	--"	Cont.Atm.Cont.	M-367	(D-7)	C	M	Q		(7.3) 2,28
AO-9-2504-B										
AO-9-2504-C										
AO-9-2504-D										
AO-9-2504-E										
AO-9-2504-F										
AO-9-2504-G										
AO-9-2504-H										
AO-9-2504-J										
AO-9-2504-K										
AO-9-2504-L										
AO-9-2504-M										
SV-9-2671-A	Gate	0.5"	Cont.Atm.Cont.	M-367	(D-6)	A	F	Q	J	(7.3) 1,2,25,27, 28
SV-9-2671-B					(D-5)					
SV-9-2671-C					(D-5)					
SV-9-2671-D					(D-5)					
SV-9-2671-E					(D-5)					
SV-9-2671-F					(D-5)					
SV-9-2671-G					(D-5)					
SV-9-2978-A	Gate	0.5"	Cont.Atm.Cont.	M-367	(D-5)	A	F	Q	J	(7.3) 1,2,25,27, 28
SV-9-2978-B					(D-5)					
SV-9-2978-C					(D-5)					
SV-9-2978-D					(D-5)					
SV-9-2978-E					(D-5)					
SV-9-2978-F					(D-5)					
SV-9-2978-G					(D-5)					
SV-9-2980	Gate	0.5"	Cont.Atm.Cont.	M-367	(C-6)	A	F	Q	J	(7.3) 1,2,25,27, 28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
VV-9-( )	Check	1"	Cont.Atm.Cont.	M-367	(D-6)	A/C	V	A	J	(7.3) 1,2,19, 27,28
AO-9-2968	Dia.	1"	Cont.Atm.Cont.	M-367	(D-7)	A	F	Q	J	(7.3) 1,2,24, 27,28
AO-20-82	Dia.	2"	Rad. Waste	M-368	(A-3)	A	F	Q	J	(7.3) 1,2,24, 27,28
AO-20-83	Dia.	2"	Rad. Waste	M-368	(A-4)	A	F	Q	J	(7.3) 1,2,24, 27,28
AO-20-94	Dia.	2"	Rad. Waste	M-368	(E-3)	A	F	Q	J	(7.3) 1,2,24, 27,28
AO-20-95	Dia.	2"	Rad. Waste	M-368	(E-4)	A	F	Q	J	(7.3) 1,2,24, 27,28
SV-52-4951-A SV-52-4951-B	Gate	1"	Cont.Atm.Dil.	M-372	(C-6) (C-2)	A	F	Q	J	(7.3) 1,2,27,28
SV-52-4949-A SV-52-4949-B	Gate	1"	Cont.Atm.Dil.	M-372	(F-5) (F-4)	A	F	Q	J	(7.3) 1,2,27,28
SV-52-4960-A SV-52-4960-B SV-52-4960-C SV-52-4960-D	Gate	0.5"	Cont.Atm.Dil.	M-372	(B-6) (G-5) (D-3) (C-2)	A	F	Q	J	(7.3) 1,2,27,28
SV-52-4961-A SV-52-4961-B SV-52-4961-C SV-52-4961-D	Gate	0.5"	Cont.Atm.Dil.	M-372	(B-6) (H-5) (D-3) (C-2)	A	F	Q	J	(7.3) 1,2,27,28

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
SV-52-4966-A	Gate	0.5"	Cont.Atm.Dil.	M-372	(B-5)	A	F	Q	J	(7.3) 1,2,27,28
SV-52-4966-B					(B-5)					
SV-52-4966-C					(A-5)					
SV-52-4966-D					(A-5)					
VV-52-( )	Check	1"	Cont.Atm.Dil.	M-372	(C-6)	A/C	V	Q	J	(7.3) 1,2,27,28
VV-52-( )					(C-2)					
VV-52-( )					(F-5)					
VV-52-( )					(F-4)					
SV-52-8101	Gate	1"	Cont.Atm.Dil.	M-372	(A-5)	A	F	Q	J	(7.3) 1,2,25,27, 28
AO-0-0475-1	Butter-	-	Standby Gas	M-391	(B-5)	B	F	Q	Common	(7.3) 2,20,28
AO-0-0475-2	fly		Treatment		(B-4)					
AO-0-0476-1	Butter-	-	Standby Gas	M-391	(B-5)	B	F	Q	Common	(7.3) 2,20,28
AO-0-0476-2	fly		Treatment		(B-4)					
AO-0-0469-1	Butter-	-	Standby Gas	M-391	(C-6)	B	F	Q	Common	(7.3) 2,20,28
AO-0-0469-2	fly		Treatment		(B-6)					
AO-0-0470-1	Butter-	-	Standby Gas	M-391	(A-6)	B	F	Q	Common	(7.3) 2,20,28
AO-0-0470-2	fly		Treatment		(A-6)					
AO-0-0452	Butter-	-	Standby Gas	M-391	(F-8)	B	F	Q	Common	(7.3) 2,28
AO-0-0453	fly		Treatment		(F-8)					
AO-0-0457					(E-8)					
AO-0-0458					(E-8)					
AO-0-0459					(D-8)					
AO-0-0460					(D-8)					
AO-0-0461					(F-5)					

TABLE 7.2-1

INSERVICE TESTING PROGRAM

CLASS 1, CLASS 2, AND CLASS 3 VALVES (Cont'd)

VALVE I.D.	VALVE TYPE	VALVE SIZE	SYSTEM	P&ID	P&ID COORDINATES	CATEGORY	TYPE OF TEST*	TEST FREQUENCY*	NOTES OR EXCEPTIONS*	RELIEF REQUEST
AO-0-0462	Butter-	-	Standby Gas	M-391	(F-5)	B	F	Q	Common	(7.3) 2,28
AO-0-0463	fly		Treatment		(E-4)					
AO-0-0464					(E-4)					
AO-0-0466					(D-5)					
AO-0-0467					(D-5)					

KEY:

A = Once per operating cycle (or during refueling outage)
B = Once every 2 years
Q = Quarterly
C = Cold shutdown exceeding 48 hr.
T = Per ASME Table IWV-3510-1
2 = Once every 2 operating cycles
N = Not applicable or none
P = Partial stroke exercise
F = Full cycle exercise, includes stroke timing for power-operated valves
M = Mechanical Exercise of check
L = Leak rate test
E = Explosive Actuator test
V = Functional check with flow
S = Set point check
J = Leak rate tested in accordance with plant Technical Specifications which conforms as far as practical to the criteria of Appendix J to 10CFR50
PI = Leak rate tested in accordance with Section XI, or in accordance with the requirements of the NRC generic letter on Pressure Isolation Valves dated February 23, 1980

Note on valve identification numbers: Table 7.2-1 can be used for Unit 2 or Unit 3. The valve identification numbers are the same for both units, with the exception of valves with a four-digit identification number. Examples are AO-9-2502-A, SV-52-8101, and MO-44-2201-A, which are Unit 2 valves. For the Unit 3 valves with four digits, increase the first digit by one, as compared to the corresponding Unit 2 valves in Table 7.2-1. The Unit 3 valves would be AO-9-3502-A, SV-52-9101, and MO-44-3201-A, respectively, for the above examples. Valves shared between both units are identified as common valves in the notes, for the applicable valves.